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Improvement of the Conditions of Childbirth in India

Including a Special Report on the Work of the Victoria Memorial Scholarships Fund during the past Fifteen Years and Papers written by Medical Women and qualified Midwives

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CALCUTTA
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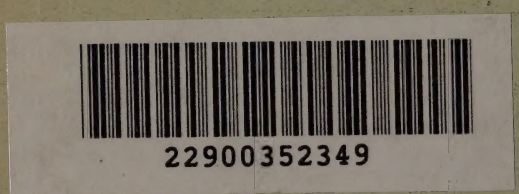

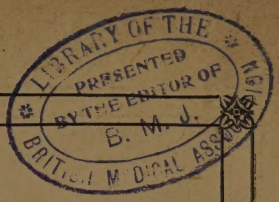

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CONTENTS.

Victoria Memorial Scholarships Fund Report.

CHAPTER I.—INTRODUCTION.

The unhappy conditions of child-birth among Indian women have for long been a matter of concern to many people. This was probably foremost in Queen Victoria's mind when she asked Lady Dufferin to endeavour to arrange for a supply of women doctors for the women of India. The foundation of the Countess of Dufferin's Fund in 1885 was the first organised effort to meet the need, although one or two qualified women missionaries were at that time already practising in India. In the years that followed, medical women, both Dufferin and missionaries, multiplied in number and Zenana hospitals sprang up in all parts of the country. The training of nurses and midwives was begun and Indian assistant and sub-assistant surgeons began to pass out from medical schools and colleges in increasing numbers. All these agencies while relieving numbers of cases of difficult labour only served to bring into relief the terrible suffering and unnecessary loss of life among mothers and babies. It became evident that while natural labour was not more difficult, if so difficult as in Western countries, yet an appalling amount of puerperal sepsis followed. The disease of osteomalacia was found to be prevalent in many parts of the country, causing pelvic contraction, in some cases so extreme that delivery without skilled help was impossible. As in other countries misplacements were present, accidents occurred during labour, and diseases during pregnancy, all leading to the loss of many mothers which in nearly every case, was followed by the death of the baby owing to ignorance on the part of the people of the artificial methods of feeding young infants.

The necessity of some more definite and special effort to meet the conditions was felt, and in 1903 the Victoria Memorial Scholarships Fund came into being formed by Lady Curzon for the improvement of the conditions of child-birth in India. It was expressly stated (Nineteenth Annual Report of the National Association for supplying Female Medical Aid to the Women of India, for the year 1903, page 27) that the funds were to be applied to the training of the hereditary dai caste as opposed to dais and midwives taken from other classes whose training might be left to the agencies (hospitals, municipalities, etc.), already carrying it on.

The funds collected amounted to Rs. 6,86,784-15-8 from which an average annual income of about Rs. 34,000 was derived.

This was distributed among the different provinces as nearly as possible in the proportion in which the money had been subscribed sufficient being retained to carry on the central expenses and to assist special enterprises in the interests of the objects of the Fund.

The money was kept apart from that of the Dufferin Fund, and the

organisation was carried on by an Executive Committee selected from among the members of the Central Committee of the Dufferin Fund.

In each province the Fund was administered by the Inspector-General, and in each centre where operations were started a local committee was formed. Endeavours were then made to induce dais to attend courses of instruction.

Unfortunately the new movement, started so suddenly, caused considerable alarm among the dai communities who, in nearly every case, believed the purpose to be inimical and somehow intended to deprive them of their livelihood. This was no doubt partly owing to the efforts previously made to train a superior class of midwives, and to the fact that medical women naturally introduced these trained midwives as much as possible into the houses of their patients explaining to the people their superiority over the untrained dai.

In some places the efforts were unsuccessful as no dais were persuaded to attend and operations were never commenced. In other places a certain number of dais attended for instruction receiving a daily or monthly stipend. Unfortunately the Zenana hospitals often did not have many cases of natural labour, and hence the classes were mainly theoretical.

Many of the women were 40, 50, 60, or even 70 years of age : some were deaf, some were blind : none had any previous education or had ever exercised their mental faculties : they were very prejudiced and jealous of their reputation and in addition honestly convinced that no one could teach them anything as regards normal labour. They believed that doctors were required in abnormal cases, but they also believed that they themselves were the proper judges as to when a doctor should be called in. This was and is the general opinion of their patients and is the attitude of the people of India at the present day. They are only very slowly beginning to realise that the great mass of the abnormal cases are due to neglect and ignorance in the treatment of natural labour.

As years went on the reports received by the Executive Committee were not encouraging. Some of the classes ceased to exist. From other quarters applications were received stating that classes could not be formed, or having been formed were serving no useful purpose, and asking that the grants might be used for the training of women not of the dai caste. The Executive Committee consented to this on the condition that it was only done when none of the hereditary caste was available. This by gradual degrees led to the almost total abandonment of the objects of the Fund throughout the country. In many cases the funds were used for the stipending of nurses in Dufferin Hospitals, who received a midwifery training, although in some of these cities the hereditary dais are now available and are receiving instruction and stipends from funds derived from other sources. Where the hereditary dai classes persisted the reports continued depressing. One statement, however, frequently repeated, seemed to offer hope for the future. It was said that amongst the dais who attended the classes the sullen spirit of resistance had

disappeared. They were willing to come, liked to talk over their cases and more frequently called for the assistance of the medical women in bad cases.

It appeared indeed that like other Indian women the dai class was capable of appreciating kindness and of showing gratitude to teachers who had the qualities of sympathy and patience.

The Victoria Memorial Scholarships Fund had not been the only nor the first effort to improve the indigenous dai. The effort had been made both in Native States and by medical missionaries. Perhaps the earliest effort was made about 1885 by Miss Hewlett of the Church of England Zenana Missionary Society in Amritsar who persuaded the dais of the city to attend her class and obtained stipends for them from the Amritsar Municipality. Her teaching was no doubt similar to that given in other training classes, but she was the first to adopt the principle that uneducated dais must not only be trained but supervised. The system she adopted required every passed dai to report to her each case as soon as confined. Miss Hewlett or her assistant visited the case ; and if the dai had done her duty by the woman she received a reward of Re. 1. The necessary funds for carrying out this scheme were provided by the municipality and latterly as many as three thousand cases or about half the number of women confined in Amritsar City were reported to the Mission doctors.

As time passed many who came most into contact with the dai class became convinced that no training could be successful unless combined with continued supervision. Operations carried out on the lines Miss Hewlett had initiated were commenced in many places and were followed by a reasonable amount of success.

See the accounts of Dr. Agnes Henderson's work at Nagpur (pages 156-157) ; (2) Dr. Gertrude Stuart's work at Quetta (pages 114-119) ; (3) the work organised by the Begum of Bhopal (pages 157-158) ; (4) Dr. Maud Allen's work at Ferozepore (pages 158-159).

Similar work is being carried on in Delhi by two English Health Visitors, see Miss Griffin's paper (pages 142-146), and successful work among the hereditary dai class has also been carried on at Ludhiana, Lahore, Patiala, and other places.

This is the history of the Fund during the past fifteen years ; and the Executive Committee feels that the time has come to pause to review the work done, to consider whether the objects of the Fund are being carried out as faithfully as would be wished, and especially to let all centres profit by the success which has been attained in a few places.

For this reason during the past year special reports and suggestions were asked from all centres (pages 9-36). Prizes were also offered to medical women for papers on improvement of the conditions of child-birth. Several of these are published in complete form (pages 37-149), while from others extracts have been taken (pages 150-154). Some extracts from the Annual Reports are also appended. In this way a mass of information and valuable

suggestions for improvement have been received of which the following is a summary :—

The greatest success in the training of indigenous dais has been met with in the Punjab where training combined with supervision is being carried on at Amritsar, Ambala, Ferozepore, Bhiwani, Multan, and Lahore ; in addition at Ludhiana 124 indigenous dais have been trained. The Report of the Inspector-General of Civil Hospitals, Punjab (page 18), shows that a large extension of this work is contemplated in the near future.

Next most successful are the Indian States where large numbers of the hereditary dai caste have been trained at Bhopal, Patiala, Indore, Hyderabad, Baroda, Gwalior. In some of these States supervision is also carried on.

In some stations in the United Provinces large numbers of hereditary dais have been trained, but with the exception of Agra there is no system of supervision, and the Inspector-General in his memorandum expresses the opinion that the work has been useless and says that it is his intention to discontinue it.

In Baluchistan training and supervision are carried out at Quetta.

In the Central Provinces training and supervision are carried out at Nagpur.

In Bengal and Bihar and Orissa indigenous dais have been trained, but there has been no supervision. The general opinion is that no improvement has resulted, and the Surgeon-General and other medical officers in Calcutta recommend that operations should cease and all efforts should be concentrated on the endeavour to replace the hereditary dai by a better educated woman.

The Bombay and Madras Presidencies are outside the operations of the Fund.

Several of the papers written by medical women describe successful work among dais. Others give graphic accounts of the difficulties to be overcome, and especially of the enormous amount of sepsis which in two papers received is estimated as causing (at times) a mortality of 80 per cent of natural labour !

There is also a number of useful suggestions for methods by which improvement can be secured.

The questions discussed may be summarised as follows :—

I.—Education of the public.

(1) Lectures to women of all classes on care during pregnancy and labour and care of young children.

(2) Instruction of men in essentials of the same.

(3) Instruction of girls and boys in primary schools on the same to a modified extent.

(4) Special pamphlets in the vernacular distributed in every house in cities and villages.

(5) The preparation of simple skeleton lectures or talks to mothers to be used at purdah clubs, schools, etc.

(6) The preparation of a series of sketches by women artists for magic lantern slides to illustrate the evil results of the work of untrained dais.

(7) A woman's journal.

(8) Baby shows, right of entry being conditional on the mothers having attended certain lectures.

(9) A simple book on ante-natal care.

(10) Purdah clubs.

(11) More well equipped women's hospitals which should be centres of instruction for women.

(12) Mothers' clubs.

(13) "Mothers' Day".

(14) A "Mothers' Secretary" in every city who can talk both to the women and their husbands.

(15) Health Visitors (trained) employed systematically in towns and villages.

(16) Bands of trained women to go from city to city with tents and moving pictures giving lectures and house-to-house visits, also showing models of various modern appliances for maternity and sanitary improvement.

II.—Miscellaneous suggestions for improvement.

(1) Women's hospitals should be more attractive and more care should be taken to make labour conducted there absolutely safe.

(2) We should specialise so as to eliminate painful labour as much as possible.

(3) There should be hospitals for infectious diseases with provision for puerperal fever.

(4) Trained dais should be subsidised and should work in connection with hospitals.

(5) They should be provided with outfits for proper work.

(6) Mothers should be provided with maternity packets.

(7) Training of dais should be carried out by women doctors (or other teachers) specially set apart for the purpose. Every training school should be inspected.

(8) Standards of training should be laid down, and especially a sufficient number of cases of labour conducted should be insisted on before examination.

(9) An effort should be made to link up all present methods of training.

(10) Maternity Centres should be started. Also Milk Depôts, Baby Clinics, and Baby Shows.

(11) Prevention of puerperal fever should be taken up by the Anti-Tuberculosis League, so saving two organisations.

(12) Certificated dais should be allowed to bring their cases into maternity hospitals and conduct them according to rules taking the usual fee from the patient.

(13) Notification of puerperal fever should be required.

(14) Free maternity homes should be provided.

(15) Crèches for young children should be provided.

(16) State aided Maternity Benefit is needed.

(17) A Central Midwives' Board for India is required.

(18) A book should be prepared for girls' schools on the lines of "Light, Life, and Cleanliness".

(19) The organisations now engaged in war work should after the conclusion of the war take up the question of Maternity Welfare.

III.—Class of women trained.

A point regarding which there is much difference of opinion is whether work among the hereditary dai class should be continued, or whether it should be given up and all effort concentrated on providing a better class of midwife. There is a general agreement that this last would be the simplest and easiest solution of a difficult problem; but while the Surgeon-General and other officers of the Indian Medical Service in Bengal and the Inspector-General, United Provinces, give a definite pronouncement that this course should be followed the majority of the medical women who discuss the question declare it impossible as a practical measure. It is true that, as pointed out time and again in the annual reports, the hereditary class is unwilling to be taught, makes unsatisfactory pupils and often after training is no better than before; while women of other classes are obedient and amenable, may have some education, and absorb new ideas readily. On the other hand, it is stated that it is impossible at present to get a sufficient number of educated Indian women to replace indigenous dais. It may be possible in the capital cities, but it is not possible throughout the districts of India, where the population is scattered over wide areas and where women are being sought for in vain to take up posts as compounders, nurses, teachers, etc. Next it is argued that a woman of higher class expects a fee much larger than the middle and low class Indian family is as a rule prepared to give. She is also unwilling to do all the work in the house the hereditary dai is expected to do and this forms a very practical obstacle to her employment in poor families. In many cases trained midwives have been retained by municipalities and it has been found that they attended few cases of natural labour even after years of work; and this even though the people were quite ready to look upon them as doctors and call them in for abnormal cases.

Some claim that the hereditary dai when young is found to be adaptable, intelligent, and willing, with a certain hereditary instinct for her work which, other things being equal, make her a better pupil than the women of other castes.

The opinion of most of the medical women, therefore, is that for general improvement of child-birth in India work amongst hereditary dais must be continued, but that it is useless unless it is combined with some scheme of continued supervision of their work by means of midwife supervisors or health visitors. It would be easier to come to a decision between these con-

flicting opinions if any of the writers could bring forward facts or figures in support of their opinions, but the only instance in which this is done is in the report by the late Colonel A. L. Duke, I.M.S., of work carried on at Quetta (pages 33-34). In Bengal training of non-hereditary dais has been carried on for many years, and the services of many of these women are now retained by municipalities in Bengal. It would be interesting and also of practical assistance to know if any town in Bengal in connection with which such a trained dai has worked for two years (the period of the work in Quetta) could show such a small mortality as quoted in Colonel Duke's report.

It would also be advantageous to learn from year to year the number of cases of natural labour attended by trained dais attached to mofussil dispensaries in Bengal and other parts of the country, and so estimate the extent to which the hereditary dai is being displaced by her trained sister.

It is probable that as regards this conditions differ in different parts of the country.

IV.—Registration and supervision of midwives.

This is recommended in a large number of papers. The Inspector-General, United Provinces, on the other hand is of opinion that the day for registration and supervision in India is still far distant. The medical women who recommend the measure, however, do not probably intend that a bill identical with the English Midwives' Act of 1905 making registration and supervision everywhere compulsory should be immediately introduced into Provincial legislatures, but rather that powers should be given to Municipalities to introduce registration and supervision where public opinion is ready for it*. The evidence in the following pages shows that several municipalities have already started schemes which recognise this necessity, the dais being persuaded to submit to supervision by means of a notifying fee. These municipalities would probably be glad to have more power in order that the schemes might be more effectively carried out and the notifying fee either reduced or discontinued. Experience has shown, moreover, that in work among dais no amount of persuasion, kindness, or money rewards will bring about a successful result, unless combined with very definite orders from the representatives of Government (see Quetta pages 114-119 and Ferozepore pages 158-159). The measure about to be introduced into the Punjab is recommended to the notice of all Local Governments. This provides for the registration and supervision of all dais and midwives in the Province who receive a Western training, and it ensures a definite standard of training and examination (page 24-31).

In conclusion the Committee desires to thank those medical women who during the last fifteen years have without payment carried on work in connection with the Fund. Experiments of the most laborious and painstaking nature have been undertaken in addition to their own often very heavy work.

* See the Hon'ble Mr. Standen's remarks as to proposed action in the Central Provinces, page 33.

The results have sometimes appeared unsuccessful but in reality all were a necessary part of the success to be attained in the future.

Improvement of the conditions of child-birth in India is a problem at least as difficult and at least as important as the prevention of plague; and it is only by patient work frequently unsuccessful and experiments constantly repeated that a successful issue can be expected. In time to come the thanks of India will no doubt be given to those who have shown by practical experiment that supervision of hereditary dais is not only desirable, but possible. In this connection the Committee would particularly mention the names of the late Miss Hewlett of Amritsar; Dr. Agnes Henderson of Nagpur; Dr. Gertrude Stuart of Quetta; and Dr. Maud Allen of Ferozepore as deserving the gratitude of the women of India.

As regards the class of women to be trained the Committee feels the warmest interest in all efforts to train and assist midwives of a superior class, but it feels that, until proof is given that the majority of women in a province, rich and poor alike, are employing these midwives for natural labour, the funds of the Victoria Memorial Scholarships must be expended entirely for the improvement of the hereditary dai class.

The Committee hopes that the opinions given will be carefully considered alike by Local Governments, Sanitary Experts, Medical Women, and Midwives.

It is felt that more might be done both by the Imperial and Local Governments to relieve the terrible conditions, the suffering, and loss of life endured by so large a section of the population.

Statistics show that in recent years the birth-rate in India has been falling, with a tendency for the death-rate to rise. If the wastage of infant life is to be taken in hand the first step is undoubtedly improvement of the conditions of child-birth. Measures to provide milk depôts, crèches, and baby clinics are of little use to children who die before or during birth, or within the first month after.

One very evident fact is the lack of statistics relating to child-birth. It ought not to be more difficult to discover the number of deaths following child-birth than the number following plague, and the discovery that certain cities were peculiarly affected in this way could be used as a strong incentive to their municipalities, and to their principal residents, to effect improvements.

The Committee hopes that medical women will do what they can to carry out some of the suggestions made for improvement. Some will no doubt prove difficult or impracticable. Others may be unexpectedly easy; but the Committee hopes that medical women will send information as to success or non-success, and from time to time further ideas and suggestions which may be of service.

It is proposed in future to publish the Victoria Memorial Scholarships Fund Report as a booklet, separate from that of the Dufferin Fund, and to make it as far as possible an accurate account of measures taken for improvement of the conditions of child-birth in different parts of the country.

CHAPTER II.—OPINIONS OF PROVINCES.

I.—BENGAL PRESIDENCY.

The Hon'ble Surgeon-General W.R. Edwards, C.B., C.M.G., M.D., K.H.P., I.M.S.

"My personal feeling is that the endeavour to train 'indigenous dais' should be dropped and that we should concentrate our energies in training midwives and they should only be trained at those hospitals in which we already have trained nurses.

We should pay these pupils Rs. 20 a month in Calcutta and Howrah and Rs. 15 in the mofussil and give them suitable quarters. The course should be one year at the Eden or Victoria Dufferin Hospital, Calcutta, and two years at the hospitals. After passing their qualifying examination they should be offered dispensary appointments as midwives, not 'dais', and their pay should be at least Rs. 20 a month. Their training must be whole time. As regards the education of the public I have, for many years past, insisted that this can only be done and done efficiently by compulsory school education.

Manuals of Hygiene must be drawn up suitable for upper middle and lower schools and it must be taught compulsorily in every school in India. It can be taught in English or in the Vernacular but above all things it must be made a subject at every University Matriculation Examination.

Once this latter is done real attention will be paid to this subject, otherwise it will be a failure. I consider this a most important point. Popular lectures, magic lanterns, the efforts of associations, *et hoc genus omne* are futile compared with the above. Hygiene is the most important subject of education in the world and so far has been the most neglected."

Lt.-Colonel R. P. Wilson, I.M.S., *Superintendent, Campbell Medical School, Calcutta.*

"I entirely agree with your remarks regarding the training of the indigenous dai. In my experience the recruitment and training of these women has been most disheartening and in the mofussil always more or less of a complete failure. The difficulties are clearly explained in Colonel Waters' letter, and I fully endorse his opinion.

The indigenous dai cannot be trained adequately in modern methods and, moreover, no amount of encouragement would induce them to come forward in anything like what is really required. Education of the masses is what appears really the stumbling-block, so that they will ask for the services of something superior and less dangerous than the indigenous women. Secondly,

a scheme for training up women of a better class is what is necessary, and this should be, as you remark, carried out at large centres where there are well equipped hospitals for general training and Gynæcological and Maternity Wards for their special education. It is, I think, on these lines that some advance will be made and, given success, must eventually lead to the gradual obliteration of the ignorant and dirty indigenous dai."

Lt.-Colonel E. E. Waters, I.M.S., *Superintendent, Howrah General Hospital.*

"The dai question is indeed a difficult one for in dealing with it we have to consider the religious and social prejudices of the patients and patients' family, and the vested interest of the dai class itself.

The indigenous dai is of a low caste, usually Chamar or something equally ignoble. She has often an hereditary claim on the family of her patient, in that she or her mother, and possibly her grandmother, have attended successive generations. Why then should she change or bother with newfangled notions?

It is necessary to attack the problem from two sides—the public must be educated to demand clean midwifery, the dais must be trained to meet this demand. So far as the public is concerned this demand is growing and is in direct proportion to the education and enlightenment of the community.

Whilst the ignorant untrained dai is still extensively employed there is a growing demand for Eden Hospital trained nurses. This is especially noticeable in the educated classes of Calcutta and gets less marked as one leaves the metropolis behind.

Thus, in Chinsurah or Berhampore the dai is all-powerful, in Calcutta the trained woman holds her own, and is perhaps gaining ground, though many high caste conservative families still employ the dai.

The demand for trained women must be stimulated by health lectures, by pamphlets in the vernaculars, by teaching in girls' schools, and by social service work. It will be a long and weary task, but it will repay the effort.

The other side of the problem is more difficult for we have to deal with an ignorant class, traditionally averse to change. I have made many attempts to induce dais to come for training. The older ones won't come, the younger ones usually attend irregularly. Their husbands get jealous, their children want them, some one must cook the family meals, and so on. What advantage are they to gain by coming? An Eden-trained dai makes from Rs. 50 to Rs. 100 per mensem in Calcutta. An untrained dai makes about Rs. 25 to Rs. 50 per mensem, with presents of food, saris, and other gifts. This she does easily without any continued attendance at a hospital or restriction of any sort.

I think that, for the present, it must be made worth the dais' while to come for training. Twenty rupees per mensem is the least possible scholar-

ship that will attract, and probably more will be required. Sums such as ten or twelve rupees are useless: they are just doles to the wrong people.

The training must be continuous and general; that is to say, the pupils must attend every day and must do general ward work. To send for them when a labour case comes in is of no value.

The training should only be attempted where there are trained nurses. A Lady Doctor is better than nothing, but nurses must train nurses. This proviso necessarily limits the places at which dais can be trained, but it should either be good training or none at all.

The intensive training as given at the Eden Hospital, and possibly at the Dufferin, is much the best. The Eden Hospital course is twelve months. In other or General Hospitals three years' training should be aimed at, and certainly not less than two accepted.

After qualification, provided attendance has been regular and conduct good, graduated scholarships, as suggested by Major Steen, are likely to be of much use.

Summary.

1. Educate the people by lectures and social service studies to demand clean dais.

2. Educate the dais by providing *adequate* scholarships in general hospitals, and continuing these after training. The scholarships must be sufficiently tempting to overcome the domestic and religious objections of the pupils."

Major Steen, I.M.S., *Professor of Midwifery, Calcutta Medical College.*

"I have gone through the file and agree that no real advance can be hoped for unless a full training in General Nursing and Midwifery, or in Midwifery alone, is given. The public makes no distinction between 'fully' trained and 'partially' trained and, if only 'partially' trained nurses are turned out, their faults are laid to the system of training.

It also seems that the indigenous dai cannot be trained in a new method any more than we expect a 'Sarah Gamp' to change her system!

The following is a rough outline of my idea on the subject. The stipend named in each case is merely a suggestion and may be considered far too liberal—but the idea is to try and get suitable candidates and having got them to see that they continue work and are not lost sight of. I have written to Belgaum, where they have a system of training 'Indian nurses' who are attached to dispensaries afterwards, asking the Civil Surgeon if he could kindly give me particulars of pay during and after training. The difficulty there was to get suitable candidates. I shall send you on the reply.

1. There should be a limit of age for training (not over 25). In the mofussil character, etc., should be certified to by responsible people through the Collector. The rules for Calcutta would, I expect, have to be separate. The

indigenous dai should not be accepted for training unless she gives up her whole time to training. At any rate mere attendance at hospital for lectures, etc., should not entitle her to a diploma. Encouragement could be given to indigenous dais to attend hospital.

2. They should reside in suitable quarters at hospital and be under the orders of the Civil Surgeon. They should be paid a monthly stipend*. Before beginning training the selected dai should sign a bond before the Civil Surgeon engaging herself not only for the period of training, but for three years after training. In these three years after training she would be attached to a certain dispensary, some dispensary where she herself will consent to work. There the Assistant Surgeon or Sub-Assistant Surgeon would generally supervise her work. She would report the names, etc., of cases attended to the Sub-Assistant Surgeon and the Sub-Assistant Surgeon would send a monthly or annual return of these cases. Inspecting Officers would make her work a part of their inspection. When not engaged on a private case she would be present daily at the dispensary and see and dress outdoor female patients and indoor female patients.

During her first year after training she should receive a stipend of say Rs. 10 per mensem† ; second year Rs. 8 per mensem ; and 3rd year Rs. 5 per mensem. After which she should have established a practice and would be independent ; *e.g.*, a dai from the Sub-Division of Kandi is trained at Berhampore for two to three years and elects to practice in Kandi. After receiving her diploma she goes to Kandi and is attached to the dispensary and is allowed private practice. After three years she is free. The scale of charges for midwifery cases, etc., should be fixed and put up on notice boards in dispensaries.

3. A junior Sub-Assistant Surgeon selected by the Civil Surgeon would give practical lectures and should receive Rs. 10 per mensem during the course, or else so much per lecture as laid down in a syllabus issued by your office. In many cases initial training in reading and writing would be required.

4. Training should only be given where European nurses are employed and where there are sufficient Midwifery cases to give a training on.

5. If a dai were required where no dispensary existed a stipend should still be given for three years, her work to be reported on by some local authority.

If an attempt is to be made to get at the indigenous dai every inducement should be given to make her take a full training and so she must be well paid to make it worth while to give up her practice as no training in nursing can be given by lectures without daily routine ward work. These indigenous dais will soon find their practices less if you can place fully qualified women in competition with them just as the old-fashioned nurse has disappeared at Home."

* I have put no fee here but it should be sufficient to attract candidates, *e.g.*, Rs. 10 per mensem (?) in 1st year.

† To induce her to stay the 3 years she might receive 6 months' pay as a reward at the end.

Dr. R. W. Fisher, M.B., *Civil Surgeon of Belgaum.*

"A modified scheme is now in force.

As native dais (midwives) are now recruited from Belgaum District it is fairly certain they will settle near their homes if at all possible. Two of our dispensaries are under the District Board, which contributes to the funds of the Nursing Association, and we intend to supply these two dispensaries, also the Belgaum Municipality, with dais as soon as they complete their training in the hospital. The period of training is three years. This is necessary on account of the small number of cases—we get about 40 or so a year. They receive Rs. 15 per mensem during their training and for three years after. During these latter three years they are bound to serve the Association in one of the District Board Dispensaries. At the end of the period they are free to go where they choose but efforts will be made to get one of the Municipal Dispensaries to take them on at an increased salary and they will gladly do so. Therefore, we only bind them for six years in all and only pay them during the period at a uniform rate of Rs. 15 per mensem. This is much better than the scheme of gradually reducing their salary, and we have sufficient applications. We only train two at a time at the hospital. (The hospital has three nursing sisters on its strength and one Lady Dufferin Indian nurse.) The Dufferin fully trained Indian nurse at the hospital takes them out with her to private cases in the town, which increases their experience.

We now have a nurse under training at Poona. When the training is complete *in all branches*, three to four years, she will be appointed Dufferin Nurse at our hospital at Rs. 40 per mensem and hold the post until another is ready to take her place from Poona. She will then be on her own entirely. The rules I shall send will make the scheme clear."

Scheme for the training of two midwives at the Civil Hospital, Belgaum.

"Two candidates for training in the Belgaum Civil Hospital to be selected from applicants ordinarily resident in the Southern Division, and preferably in the Belgaum District. Their age should be between 18 and 25. They will be bound to serve the Midwives' Association for a period of six years. They will be under training at the Civil Hospital, Belgaum, for a period of three years and will receive Rs. 15 per mensem with free quarters at the Civil Hospital. After completion of their training they must serve the Association for a further period of three years during which period they will be attached to the Local Board Dispensaries or to the Belgaum Municipal Dispensary and paid Rs. 15 per mensem from the Midwives' Association Fund, together with quarters at the dispensary, or an allowance in lieu of quarters. They will be allowed private practice during the latter period. At the end of three years dispensary service efforts will be made to secure them employment at one of the Municipal Dispensaries on a salary of not less than *Rs. 20 per mensem*, with quarters."

Dr. M. V. Webb, W.M.S., *Superintendent, Victoria Dufferin Hospital, Calcutta.*

"I should suggest a properly organised scheme of maternity and child welfare as carried out in Great Britain in various cities. This should be under the supervision of a fully qualified medical woman with trained European nurses working under her in each district. One or more to supervise and instruct the indigenous dais, as in Delhi at the present time, and one or more to supervise trained midwives, as employed at the present time in Calcutta."

The Civil Surgeon, *Birbhum.*

"(1) Indigenous dais should be induced to come and receive instruction on payment of a higher remuneration than is usually given now.

(2) They should attend only on certain week-days, and not be regular attendants of the hospital, because these dais are mostly family women, so they cannot conveniently leave their homestead and ordinary household duties to stay in hospital for receiving instruction however short the period of attendance may be. The system of keeping them always engaged in a hospital on a certain salary per month has, I think, practically deterred indigenous dais from attending.

(3) These dais when trained should receive, besides their usual prizes, certain stipends either from the District Board or the Municipality where they practise, or the Victoria Memorial Scholarships Fund every month for a certain number of years on condition that they should utilise the instruction received in the hospital in their private practice, and that their stipend should be forfeited if they fail to do so."

The Civil Surgeon, *Bankura.*

"In view of the customs and the conditions of the people here it is not easy to suggest any simple practical scheme that may bring about better results in this direction. The whole question, it seems to me, depends upon the spread of education among females and the conditions of the people. Appointments of numbers of trained dais in different charitable dispensaries, whose duty will be to attend delivery cases gratis, may be of service in bringing home to the public the advantage of employing trained dais."

II.—UNITED PROVINCES.

The Hon'ble Colonel C. Mactaggart, C.I.E., M.A., M.B., I.M.S., *Inspector-General of Civil Hospitals, United Provinces.*

"It must be clearly understood that, apart from the work done in connection with the Victoria Memorial Scholarships Fund, a serious attempt

has been made in these Provinces of late years to train indigenous or bazaar dais in the work which they have to do. For some years past the Local Government has given a grant of Rs. 6,000 per annum to be expended on training indigenous dais, and this sum has been distributed by the Inspector-General of Civil Hospitals to Civil Surgeons and first class Medical Women to meet the expenses connected with such training. Many hundreds of indigenous dais have in this way gone through a course of training, and have been paid for receiving such training, but I cannot say that the result has been anything but most disappointing. Last year I asked the opinions of all Medical Women and Civil Surgeons as to whether the so-called training of indigenous dais was serving any useful purpose, and the opinions I received were practically unanimous as to the uselessness of continuing the attempt to train indigenous dais any further. The opinion expressed by Miss Leach, as given in the tabular statement attached to this letter, may be taken as typical of the opinions I received from Civil Surgeons and Medical Women. I, therefore, decided that at the commencement of the present financial year I would ask the Local Government to permit me to drop this attempt at training indigenous dais and to devote the Rs. 6,000 annually granted to increasing the number of properly trained dais being educated in Dufferin Hospitals by the Victoria Memorial Scholarships Fund. I hoped in this way to double and eventually, with more assistance from Government, to still further augment the number of thoroughly trained dais produced by the Dufferin Hospitals. Unfortunately, owing to the exigencies of the war the Local Government was obliged at the commencement of the present financial year to reduce for the time being its grants for medical purposes, and among other grants which were abolished was that of Rs. 6,000 for the training of dais. I have, therefore, much to my regret, been unable to take any action such as I intended to take in the matter.

I would, however, point out that the Government of these Provinces has always been most generous in giving financial assistance to the Dufferin Fund, and to all schemes in connection with it, and I have not the slightest doubt that after the war is over the grant for training dais will again be given and, if necessary, increased.

I consider that the training of Victoria Memorial Scholarships Fund dais is being satisfactorily carried out in the Dufferin Hospitals, and what is most wanted now is a large increase in their numbers. From enquiries which I have made I have not the least doubt that all the trained dais who can be produced from Dufferin Hospitals, and who desire such employment, will certainly be employed by Municipalities in these Provinces.

I may point out that the proposals made by Medical Women in the tabular statement attached to this letter, for the compulsory registration of dais and compulsory supervision of their work, are, under present conditions, impracticable and Utopian. Such registration and supervision could only be the result of legislation undertaken by Local Governments, and I am perfectly certain

that no Local Government would be willing to undertake such legislation. It is only within the last year or eighteen months that Acts for the registration of medical practitioners have been passed at most Indian Provinces, and these Acts do not make registration compulsory, nor do they interfere in any way with the right of unregistered practitioners to practise. Under these circumstances it can be easily seen how very far off we are from any possible action towards the registration of dais, and towards the prevention of practice by unqualified dais.

I am strongly of opinion that in all sanitary and medical matters in this country progress can only be made by carrying the people with us, and not by driving them. Progress in such matters can only be very slow and gradual and it can only be made as the result of a general advance in education and of a gradual increase of the confidence of the people in the methods of Western medicine. No greater mistake can be made than to attempt to do too much and to endeavour to advance our methods by compulsion.

My views, therefore, with regard to the training and employment of dais are that the following line of action should be followed, and that nothing further should be done in the meantime :—

(1) All attempts to improve and educate the existing bazaar dais are hopeless and may as well be dropped at once.

(2) The number of properly trained dais, Victoria Memorial Scholarships Fund and others, produced in our Dufferin Hospitals should be increased as much as possible.

(3) Municipalities should be asked to provide employment for these properly trained dais.

(4) When Municipalities employ and pay such dais they should be trusted to see that the work of the dais is supervised either by the Health Officer or by the Medical Woman in charge of the local Dufferin Hospital but no hard-and-fast rules on this subject should be laid down, each Municipality being permitted to adopt the system which it thinks most suitable.

Municipalities, at any rate in these Provinces, are now largely independent of Government control, and that fact must be recognised, and also the fact that any attempt to interfere with their control over their employees will be strongly resented."

Dr. F. Leach, L.R.C.P. & S., M.D., L.M. (Dublin), *Medical Officer, Dufferin Hospital, Cawnpore.*

" There is no improvement in the work of indigenous dais in the city or district since the Fund operations were started. On the contrary ' a little knowledge is dangerous '. The bazaar dais who have been coaxed and paid to attend a few classes have become more bold and daring and are deceiving the public by giving them to understand that they have had a hospital training, whereas they have not, and have only attended a few lectures and then remain-

ed away. A few have come regularly and received the prescribed certificate stating the number of classes and the elementary training they have had and these, to my knowledge, have done more harm than good. They unnecessarily delay and handle cases who would have otherwise sought proper help had they not been duped by the dai and her exaggerated statements regarding her certificate and qualifications. These certificates are also misused and passed on from one to another as in the case of a mother, daughter, and daughter-in-law, one having obtained the certificate and the other two benefiting. I have realised the danger and inadvisability of this procedure and have stopped issuing them to any others.

I am of opinion that it is a hopeless undertaking to get any good out of the *bazaar indigenous dai*, who is steeped in superstition and wedded to her old system of practice, and it is a waste of time, good money, and trouble to make ourselves believe that any good can be got out of them, and the sooner we realise this fact the greater will be our chances of coping with the problem of infantile mortality and diminishing the death-rate of mothers in child-birth. Nothing short of registration of all dais practising in the city, trained or untrained, will give us an opportunity to see and devise methods to cope with the problem.

The scheme which would probably work out to some extent to enable us to ascertain whether the trained Victoria Memorial dais are gaining ground and doing any appreciable good in the city is to suggest that the Health Officer be asked to keep up a column in the birth register, and note down at the registration of each birth the name and address of the dai who conducted the case, and whether trained or untrained. A copy of the above registration should be sent down regularly each month to the Lady Doctor who will prepare a statement annually showing the work done by the Victoria Memorial dais as well as the bazaar dais. If possible, funds should be placed at the disposal of the Lady Doctor to enable her to follow these cases up by appointing locally some reliable, trained person who could report to her the actual state of each case without intruding or going against the feelings of the people. In this way kindly treatment and care can be suggested and probably many a life saved. This procedure will give us a good opportunity of seeing whether the Victoria Memorial dais are really displacing the ignorant bazaar dais, and to what extent. This step will also make the community more careful as to the dai they get in to attend their wives, and the bazaar dai less likely to take up cases and be more careful how she handles them when she gets to know a register of her work is being kept up."

Dr. M. E. Ashton, M.R.C.S., L.R.C.P.,
Dufferin Hospital, Allahabad.

"The Medical Officer recommends the registration of the indigenous dais and putting them under the trained dais and the Health Officer, to produce

good results. The indigenous dais should be required to report all the birth to the trained dai or Health Officer, and a still better result could be obtained if the indigenous dais reported all their cases to the Lady Doctor in charge of the Dufferin Hospital once a week, or at least reported their cases through the trained dai on the spot once a month. Every week, or even once a month, the Lady Doctor or an Assistant appointed by her could go round and inspect all the work done by the indigenous dais. The Municipality, of course, should arrange with the Lady Doctor to make it worth her while to undertake this work of inspection. The Lady Doctors are anxious to help in this scheme."

Dr. MARY O'BRIEN, W.M.S., *Dufferin Hospital, Lucknow.*

"The Medical Officer suggests that better results could only be obtained by appointing well trained European midwives to supervise the work of indigenous dais and non-indigenous dais."

Dr. A. M. WATTS, W.M.S., *Ishwari Memorial Hospital, Benares.*

"Whether indigenous, or non-indigenous, dais should get the same training; the training should be a sound one and of such a standard as to turn out trustworthy and efficient midwives. The training should be given by competent teachers in hospitals possessed of well equipped, well managed maternity departments, dealing with a sufficiently large number of midwifery cases to afford clinical material.

On qualifying as dais they should be registered as such and carry on their work under some kind of control and supervision. To accomplish this scheme every qualified dai should be attached to the hospital of the city or district in which she intends practising. The Medical Officer of the hospital should maintain a book in which should be entered the name, address, and full particulars of each case the dai attends. In abnormal cases she must call in medical aid or take the patient into hospital according to the circumstances of the case. From the reports of her case the Medical Officer can judge whether the dais' work is useful and satisfactory and can, when necessary, inspect her work.

The scheme need involve no extra expenditure nor staff. Dais would have to be paid a small retaining salary and provided with the necessaries for their practice. To counterbalance this expenditure a certain percentage of their fees should be paid to the hospital."

III.—PUNJAB.

The Hon'ble Colonel H. HENDLEY, C.I.E., M.D., K.H.S., I.M.S.,
Inspector-General of Civil Hospitals, Punjab.

"No reliable data in regard to the information called for by the Central Committee is available, nor has any workable scheme which will suit the

existing conditions of things been suggested for the better investment of funds by any of the training centres where Fund operations have been, or are still being, carried on. What has been suggested by way of "schemes for improvements" are (1) the compulsory training of dais, and (2) supervision of their work. The former cannot be insisted upon until a Midwives Act on the lines of the British Act is passed, which at present we cannot hope for, but the registration of dais under the Punjab Central Midwives' Board, and female education may to some extent improve matters. Supervision of work will be made possible under the directions of the Local Supervising Committees to be established in connection with the Punjab Central Midwives' Board who will employ trained workers to supervise the work of all practising dais and midwives on the roll and satisfy themselves that they are not allowed to lapse into old ways and methods. It will not, therefore, be necessary for the Executive or the Provincial Committee of the Victoria Memorial Scholarships Fund to take up this question so far as the Punjab is concerned except probably in the way of providing funds to assist local bodies to supervise midwives, etc.

2. As to question (6) in your circular under reference I have much pleasure in enclosing, for the information of your Committee, a copy of my letter No. 1099—S—Genl., dated the 20th idem, together with a copy of its enclosures, respecting the training of dais from the districts of the Punjab under the auspices of the Victoria Memorial Scholarships Fund, the District Boards, and the Municipal Committee, Amritsar. The scheme therein outlined is now before the Local Government and though it has not yet been brought into force and cannot be said to be, by any means, an adequate solution of the problem, it forms at least a basis on which to found bigger and more thorough projects. If it is successful in doing this much money spent on it will not have been spent in vain, and will go some way towards improving the conditions of child-birth in this Province. The scheme, if sanctioned by the Local Government, is calculated to meet present requirements so far as the Punjab is concerned.

3. In conclusion I would like to point out that the information in the accompanying statement relates only to the classes for the training of dais which have been, or are still being, carried on under the auspices, or with the co-operation, of the Victoria Memorial Scholarships Fund. Others which have been established, and are kept going without any assistance from, or quite independently of, the Fund, such as those at the Farrer Hospital, Bhiwani, and the C. M. S. Hospital, Multan Cantonment, have been excluded. I also take this opportunity to enclose, for the information of the Executive Committee, a copy of the rules and regulations framed by the Punjab Central Midwives' Board in respect to the performance of the duties to be assigned to it. They have been approved by the Punjab Medical Council and are now awaiting the orders of the Local Government."

(Copy of letter No. 1099—S—Genl.)

With reference to the correspondence ending with Mr. Kettlewell's letter No. 1053—S.—M. and S., dated the 29th of June 1915, I have the honour to forward herewith, for the approval of Government, a revised scheme for the training of indigenous dais from the districts of the Punjab, under the auspices of the Victoria Memorial Scholarships Fund, District Boards, and the Amritsar Municipality, and to offer the following remarks :—

2. The original scheme which accompanied Colonel Bamber's letter No. 3737—Genl., dated the 11th of May 1915, has now become more or less out of date partly because the St. Catherine's Hospital, Amritsar, has ceased to carry on the Municipal dai classes owing to the grant-in-aid sanctioned for the purpose having been withdrawn by the Municipal Committee, and partly because of the changes in the courses of instruction, etc., necessitated by the creation of a Central Midwives Board for the Punjab. Since the submission of the above scheme it has also been found necessary to discontinue, for want of suitable material, the training of indigenous dais at some of the places where it was intended to establish local training classes. The present scheme has, therefore, been prepared after taking into consideration our present position as regards the training of dais at Amritsar, the Central Midwives' Board, Punjab, and the places where the sufficiency of the training material would justify local classes being started.

3. The object underlying the scheme has been fully explained in my predecessor's letter of May 1915. The only possible means of reducing, or at least keeping within bounds, this appalling maternal and infant mortality in child-birth is to strike at the root cause of the evil which can only be done by affording facilities, such as those outlined in the enclosed scheme, to the practising dais to acquaint themselves with modern methods which have improved the practice of midwifery.

4. As stated in paragraph 2 of Mr. Kettlewell's letter referred to above it would certainly have been easier to induce indigenous dais to join for training the various local centres fairly close to their home, rather than to collect them at Amritsar, but, unfortunately, the number of maternity hospitals where it would be possible to establish local training classes is extremely small (there being only seven such institutions in the Province) and these cannot take in more than two pupil dais for training at a time. It was, therefore, essential that in addition to the local training classes there should be established on thoroughly modern and up-to-date lines a central training school capable of training a fairly large number of women at a time and the school that is being started at Amritsar in connection with the new Princess of Wales Zenana Hospital is expected to meet the needs of the Province in this respect.

5. In accordance with the regulations of the Punjab Central Midwives' Board the course of instruction for indigenous dais will now extend over a period of six months and the total cost of training a dai at the Amritsar School,

which will be kept up conjointly by the Victoria Memorial Scholarships Fund, District Boards, and the local Municipal Committee would be Rs. 113 (V.M.S.F. Rs. 51, D. B. Rs. 62=Rs. 113), in addition to the expenses incidental to hospitals, such as salaries of staff, etc., which would be found partly by the V. M. S. Fund and partly by the Municipal Committee, Amritsar. The total cost of training dais in the local training centres would be a little higher than at Amritsar, *viz.*, Rs. 167 per head, of which the District Boards' share would be Rs. 62 and the balance Rs. 105 will have to be found by the Local Government, who will also have to build quarters for dais at an estimated cost of Rs. 500 each (Standard Plan—Menial Staff Quarters) where none exist at present. In the local classes Government is expected to take the place which the V. M. S. Fund will hold in the Central Training School as, after incurring heavy expenditure on account of the training of dais and quarters for the Superintendent (a member of the Women's Medical Service, India), it would not be reasonable to expect or demand any further assistance from the Fund towards the maintenance of the local classes.

6. The scheme, so far as it relates to it, has been approved by the Municipal Committee, Amritsar, and in view of the urgent necessity that exists for reform in the direction indicated it is hoped that the Local Government will be pleased to address District Boards in the Punjab to assist in its furtherance, and will also agree to a part of the expenditure on account of the local training classes being admitted as a charge against Provincial revenues.

Proposed scheme for the training of indigenous dais from the districts of the Punjab to be carried out by the co-operation of the Victoria Memorial Scholarships Fund, the District Boards, and the Municipal Committee, Amritsar.

A.

It is proposed on the part of the Victoria Memorial Scholarships Fund :—

1. To offer scholarships at the rate of Rs. 6 per mensem to indigenous dais of the Punjab (*a*) practising in the districts, and (*b*) practising in Municipal and Cantonment towns which have not facilities for training dais.

Expenses for training a dai for six months work out at Rs. 51, *vide* details below :—

	Rs.
1. Scholarships at Rs. 6 per mensem for six months . . .	36
2. Contingencies at Re 1-8 per mensem for six months . .	9
3. Reward for passing the examination .	6
TOTAL .	51

Their young relatives would be eligible for such scholarships provided the dai undertook to introduce them into her practice after training.

2. To hold examinations and give certificates in accordance with the rules of the Punjab Central Midwives' Board for indigenous dais.
3. To give a reward of Rs. 6 to each passed dai.
4. To secure the services and salary of a fully qualified medical woman to act as Superintendent of the Amritsar Dai School and to build suitable quarters for her or to pay house rent (Rs. 60 per mensem) in lieu until quarters are built.

B.

It is proposed on the part of the District Boards :—

1. To offer scholarships similar to those offered by the Victoria Memorial Scholarships Fund so that each dai, whether under training at Amritsar or a local training centre, would receive a stipend of Rs. 12 per mensem.

Expenses for training a dai for six months work out at Rs. 62, *vide* details below :—

	Rs.
1. Scholarship at Rs. 6 per mensem for six months . . .	36
2. Travelling allowance (average) . .	6
3. Cost of outfit . .	20
TOTAL .	62

2. To pay travelling allowance of dais and, if necessary, their families to and from Amritsar or other training centres.
3. To give each passed dai on return to her station an outfit consisting of the necessaries for the proper and cleanly practice of midwifery and to renew these from time to time as required.
4. To pay each dai a stipend of Rs. 2 per mensem conditional on the proper performance of her duties as certified by the Local Supervising Committee of the Punjab Central Midwives' Board.

C.

It is proposed on the part of the Municipal Committee, Amritsar :—

1. To give the superintendence of the Municipal dais work and of the new female hospital to the Medical Woman whose services are lent by the Inspector-General of Civil Hospitals, Punjab, and whose pay is provided by the Women's Medical Service.
2. To continue the grant of Rs. 300 per mensem heretofore given for defraying the expenses of the municipal dais work.
3. To provide a fully qualified Medical Woman to act as Assistant Superintendent of the school and hospital.
4. To provide the necessary staff for the working of the hospital.
5. The Municipal Committee also undertakes that if any buildings are erected by the Victoria Memorial Scholarships Fund or other charitable association for the purposes of the school these build-

ings will be bought by the Committee at a fair valuation should it (the Committee) at any future time cease to carry on the school.

[NOTE.—The above conditions have been accepted by the Municipal Committee, Amritsar.]

D.

It is proposed on the part of the Local Government :—

1. To offer scholarships at the rate of Rs. 6 per mensem to dais for training at a local training centre.

Expenses for training a dai for six months work out at Rs. 105, *vide* details below :—

	Rs.
1. Scholarship at Rs. 6 per mensem for six months . . .	36
2. Honorarium to teacher at Rs. 6 per mensem for 6 months	36
3. Contingencies at Re. 1-8 per mensem for six months . .	9
4. Rent for quarters (if available) at Rs. 3 per mensem for six months . . .	18
5. Reward for passing the examination .	6
TOTAL .	105

2. To pay a honorarium of Rs. 6 per mensem per dai to the teacher at the local training school.

3. To give a reward of Rs. 6 to each passed dai.

4. To pay rent at the rate of Rs. 3 per dai per month for the quarters made available for the pupil dais at the local training centre and to build new ones (Standard Plan—Menial Staff Quarters) where none exist at present.

Explanatory Notes.

(A) The local training centre or school would be a hospital approved by the Punjab Central Midwives' Board for the training of indigenous dais. There are about seven such institutions in the Punjab at the present time (*viz.*, the Mission Zenana Hospitals at Bhiwani, Palwal, Ambala, Ferozepur Cantonment, Asrapur, and Multan Cantonment, and the Lady Aitchison Hospital, Lahore).

(B) The cost of building quarters for dais according to Standard Plan—Menial Staff Quarters would be about Rs. 500 for one or Rs. 800 for two quarters.

The cost of training ten dais for six months would be :—

(*a*) At Amritsar—

	Rs.
Victoria Memorial Scholarships Fund, 10×51 . . .	510
District Boards, 10×62	620
TOTAL .	1,130*

* This does not include expenses incidental to hospitals, such as salaries of staff, etc., which would be found partly by the Victoria Memorial Scholarships Fund and partly by the Municipal Committee, Amritsar.

(*b*) At local training centres—

	Rs.
District Boards, 10×62	620
Local Government, 10×105	1,050
TOTAL	1,670*

The Constitution and Rules of the Punjab Central Midwives' Board.

Constitution and Duties of the Central Midwives' Board.

1. The Punjab Central Midwives' Board shall consist of—

(1) The Inspector-General of Civil Hospitals, Punjab,—*President.*
(2) The Assistant to the Inspector-General of Civil Hospitals, Punjab, for inspection of Women's Hospitals,
(3) The Professor of Midwifery, Medical College, Lahore, } *Members.*
(4) A lady doctor to be co-opted by the Board from time to time as a vacancy occurs,
(5) A nurse to be co-opted by the Board from time to time as a vacancy occurs.

The duties and powers of the Board shall be as follows :—

I.—To frame rules—

(*a*) regulating their own proceedings ;
(*b*) regulating the issue of certificates and the conditions of admission to the roll of midwives and dais ;
(*c*) regulating the course of training, the conduct of examinations, and the remuneration of the examiners ;
(*d*) regulating the admission to the roll of women already in practice as midwives or dais at the time of the formation of the Board ;
(*e*) regulating and supervising the practice of midwives and dais ;
(*f*) deciding the conditions under which certificates of midwives and dais may be suspended or confiscated ;
(*g*) defining the particulars required to be given of practice.

II.—To appoint examiners.

III.—To decide upon the places where, and the times when, examinations shall be held.

IV.—To publish annually a roll of midwives and dais who have been duly certified by the Board.

* This does not include the cost of building new quarters at places where none exist at present.

Relation of Board to Local Government and Punjab Medical Council.

Rules framed by the Board shall be valid only if approved by the Local Government, and the Local Government before approving any such rules shall take into consideration any representations which the Punjab Medical Council may make with respect thereto.

I.—RULES OF THE PUNJAB CENTRAL MIDWIVES' BOARD.

(*a*) Regulating the proceedings of the Board.

1. The Chairman shall be the Inspector-General of Civil Hospitals.

The Secretary and Treasurer shall be the Assistant to the Inspector-General of Civil Hospitals.

The Board shall meet at least once every six months.

Fourteen days' notice of meetings must be given.

Quorum.—Three.

The agenda will be typed or printed so as to reach each member a week previous to the meeting.

(*b*) Regulating the issue of certificates and conditions of admission to the examination of midwives and dais.

Certificates will be of three grades—

I.—Diploma in midwifery (D. M.) (English).
II.—Certificates for dais (D. C.) (Vernacular).
III.—Certificate for indigenous dais (I. D. C.) (Vernacular).

Note 1.—No woman shall be certified under this Board until she has complied with the rules and regulations laid down by the Board.

Note 2.—The certificate granted by this Board shall not confer upon any woman any right or title to assume any name, title, or designation implying that she is a registered medical practitioner or that she is authorised to undertake the charge of cases of abnormal labour or disease.

I.—Diploma in midwifery.

Candidates must be able to read and write English easily.

They must produce a certificate of birth or declaration showing that the candidate is not less than 20 years of age or more than 45. They must produce a certificate of good moral character, signed by two persons of position acceptable to the Board, each to state how long he or she has known the candidate.

They must produce certificates that their training has been in accordance with the rules of the Board [*vide* rule I (*c*)].

II.—Certificate for dais.

Candidates may be illiterate. They must produce a certificate to show that their age is between 20 and 45 years.

They must produce a certificate of good moral character, signed by one person acceptable to the Board.

They must produce certificates to show that their training has been in accordance with the rules laid down by the Board [*vide* rule I (*c*)].

III.—Certificate for indigenous dais.

Candidates must be approximately between 20 and 50 years old, they must produce a certificate from a Municipal Commissioner, Tahsildar, Zaildar, or other Government official to show that they are indigenous dais working in that place, or that they are nearly related to such dais.

They must produce a certificate from their teacher that their conduct has been satisfactory during training, and that the training has been in accordance with the rules laid down by the Board [*vide* rule I (*c*)].

(*c*) Regulating the course of training, the conduct of examinations, and the remuneration of examiners.

Course of training for D. M. (English).

1. Candidates for the Diploma in Midwifery should attain to the standard of the English C. M. B. examination.

Their training must extend over 18 months under a recognised teacher* or in a recognised hospital†.

They must produce evidence of having (1) personally conducted 20 cases of labour, (2) of having nursed 20 lying-in women and their infants, (3) of having attended three courses of at least ten lectures each, extending over a period of 12 months.

Candidates who hold certificates of training in general nursing of not less than two years' duration from a recognised women's hospital will be excused 12 months of the above 18 months' training, and the course of lectures can extend over 6 months, instead of 12.

The examination will be oral, practical and written, up to the standard of (*a*) Jellett's "A Short Practice of Midwifery for Nurses", or (*b*) "Syllabus of C. M. B., England", pages 12 and 13.

Fee for examination Rs. 10; for re-examination Rs. 5.

Course of training for D. C.

2. Candidates who are not indigenous dais are eligible for the D. C. examination.

Stipend holders of the nurse-dai class will also be eligible for this examination at the end of their two years' course.

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* A recognised teacher is any registered medical practitioner.

† A recognised hospital is any female hospital where the number of midwifery cases is sufficient (list kept at office of Inspector-General of Civil Hospitals).

The examination will be oral and practical only, up to the standard of Sir Pardey Lukis' "Elementary Manual of Midwifery".

Questions will also be asked in—

(*a*) Elementary Domestic Hygiene,
(*b*) First Aid,
(*c*) Home Nursing.

Training must extend over two years under a recognised teacher; 24 cases of labour must have been conducted under supervision.

Candidates who produce certificates to show that six months of the above training have been passed as probationer nurses in the wards of a women's hospital recognised by the Board need not produce certificates of having attended separate courses in Hygiene, First Aid, and Home Nursing.

Fee for examination Rs. 2; for re-examination Re. 1.

Course of training for I. D. C.

Candidates must be of the indigenous dai class; they must be women actually practising in their town or district, or be so nearly related to women thus practising, as to be acknowledged as belonging to the hereditary dai caste.

Their training must extend, if in residence, over a period of at least six months, or if not in residence for one year, at a recognised training institution. In each course the number of lessons, either practical or theoretical, must be 100, of which candidates must have attended 75.

They must have conducted under supervision 10 cases of labour. Examination to be oral and practical only. Candidates must satisfy the examiners that they can conduct a normal confinement.

They will be examined in—

(1) Cleanliness of person (clothes and hands).
(2) Disinfection of hands and patient's vulva.
(3) Abdominal palpation and vaginal examination.
(4) Management of labour.
(5) Method of cutting, tying, and dressing the baby's cord.
(6) Care of baby's eyes, mouth, giving of bath, and instruction in artificial feeding.
(7) Application of binder.
(8) Preparation of patient and bed in obstetric cases.
(9) Preparation of and giving of enemas.
(10) Preparation of and giving of vaginal douche.
(11) Preparation of and passing of catheter.
(12) Preparation of antiseptic lotion (lysol).
(13) Preparation of and keeping of sterilised rags and sterilised hot and cold water.

(14) The care of the lying-in woman, including changing of bedding, preparation of clean pads of napkins, care of the breasts, taking of temperature (not necessarily reading the thermometer), counting pulse (approximately).

(15) The recognition of the chief obstetrical emergencies.

(16) The duty of the dai in cases of P. P. H., abortion, breech delivery, and child apparently still-born.

(17) The duty of the dai with regard to reporting cases of—

Extreme anæmia	during pregnancy.
Excessive vomiting	
Stunted growth or lameness	
Ante partum hæmorrhage	
Œdema of feet and face	
Abnormal presentation	during labour.
Convulsions	
Obstructed labour	
Third stage lasting more than 2 hours	
Injury to mother or child	
Fever lasting more than 24 hours	during puerperium.
Painful, swollen breasts	
Fœtid lochia	
Ophthalmia neonatorum	
Tetanus of mother or child	
Umbilical sepsis of child	
Death of mother or child	

There will be no fee for examination, but certificates will only be given on payment of Rs. 2.

NOTE.—If a woman cannot obtain teaching under a recognised teacher in her own town or district she can obtain it (*a*) if entering for the D. C. examination at a recognised hospital (list kept at the office of the Inspector-General of Civil Hospitals), and (*b*) if entering for the I. D. C. examination at the Amritsar Dai School, application to be made to the Principal.

Conduct of examinations.

Examinations will be held twice a year at the different centres when and where required (see rule III). Notice will be sent one month beforehand to each of the Local Committees of the approximate date for holding the examination. Within 10 days of receiving this notice names of intending candidates, with all necessary certificates, must be sent to the Secretary, Punjab Central Midwives' Board.

Fees.

Examination fees must be paid at the time of examination.

Failure to pass.

Candidates who fail to pass at one examination will not be admitted for examination at any centre until three months have elapsed.

Remuneration of examiners.

Examiners other than Government servants will be paid Rs. 2 per candidate for midwives and Re. 1 for dais, with a minimum of Rs. 16. If an examiner other than a Government servant has to travel her actual expenses for the journey will be paid out of examination fees.

(*d*) REGULATING THE ADMISSION TO THE ROLL OF MIDWIVES OR DAIS OF THOSE WOMEN ALREADY IN PRACTICE AT THE TIME OF THE FORMATION OF THE BOARD.

All women already in practice as midwives or dais will be eligible for admission to the roll who hold—

(1) the C. M. B. certificate of England, or those recognised as equivalent in England;
(2) the Lahore Medical College certificate for dais or midwives' diploma;
(3) the certificate of midwifery of the United Board of Missions Nurses examination;
(4) the Victoria Memorial Scholarships Fund certificate.

Certificates other than these will be considered by the Board each on its own merits.

(*e*) REGULATING AND SUPERVISING THE PRACTICE OF MIDWIVES AND DAIS.

Local Supervising Committee.

In each Division of the Punjab there shall be a Local Supervising Committee (L. S. C.).

This shall in each case be composed of five members as follows:—

A Civil Surgeon.
A registered medical woman.
A Nursing Superintendent.
Two ladies, either English or Indian.

The original members will be appointed by the Board, but vacancies on the Committee will be filled up by co-option.

Duties of the Local Supervising Committee—

(1) to appoint a Chairman and Secretary, and to hold meetings at regular intervals;
(2) to keep a roll of midwives and dais in the Division and submit this each year to the P. C. M. B.;

(3) to submit names of suitable examiners to the Board for the local examinations;

(4) *Supervision of dais.*—To provide for the supervision of midwives and dais in the Division by appointing locally, when possible, in all districts of the Division qualified persons whose duty it will be to supervise the practice of the dais on the roll; these persons shall, where possible, keep a register of cases attended, inspect outfits, replenish dressings and outfits, and if qualified to do so, attend cases with the dais and visit cases during the puerperium, reporting to the nearest doctor all cases of puerperal fever, ophthalmia, etc., and reporting to the Local Supervising Committee any case of negligence, malpractice, or misconduct on behalf of the *dais* under her charge.

Payment to inspectresses.

These inspectresses, if not Government servants, will be paid by Local Boards or, failing this, by the Victoria Memorial Scholarships Fund, if funds permit. The salary to be decided by the Local Supervising Committee after consultation with the P. C. M. B.

(*f*) DECIDING THE CONDITIONS UNDER WHICH CERTIFICATES OF MIDWIVES AND DAIS MAY BE SUSPENDED OR CONFISCATED.

Certificate holders shall have their names struck off the roll after due enquiry by the P. C. M. B. if they are reported by the Local Supervising Committee as incompetent, or if found to be guilty of immorality or gross misconduct in their practice. The L. S. C. are enjoined that the charge, defence and orders passed should in every case be reduced to writing before the case is reported to the P. C. M. B.

Appeal from decision of P. C. M. B.

Any woman thinking herself aggrieved by any decision of the Punjab Central Midwives' Board removing her name from the roll of midwives or dais may appeal therefrom, through the Board, to the Local Government within three months after the notification of such decision to her, but no further appeal shall be allowed.

(*g*) DEFINING THE PARTICULARS REQUIRED TO BE GIVEN OF PRACTICE.

Every certificate holder shall report herself in person or by writing once yearly to her Local Supervising Committee at a time appointed by them, and also to the Local Supervising Committee either personally or in writing, when she takes up residence and begins practice in another area from that in which she originally practised: this notice must be given within one month of taking up residence.

II.—TO APPOINT EXAMINERS.

At each examination the examiners shall be three :—

(1) The Assistant to the Inspector-General of Civil Hospitals.
(2) A registered medical woman.
(3) A Nursing Superintendent.

These last two should ordinarily be nominated by the Local Supervising Committee and approved by the Central Midwives' Board.

The local examiners shall be appointed annually and will be eligible for reappointment.

III.—TO DECIDE UPON PLACES WHERE, AND TIMES WHEN, EXAMINATIONS SHALL BE HELD.

Examinations shall be held at one or two centres in each Division of the Punjab—

Division.	*Place of examination.*
Ambala	Ambala City ; Rewari.
Lahore	Amritsar ; Sialkot.
Jullundur	Ludhiana ; Ferozepore.
Rawalpindi	Rawalpindi ; Shahpur.
Multan	Multan.

Examinations shall be held twice a year, as far as possible in October and March.

IV.—BERAR.

The Hon'ble Mr. B. P. STANDEN, C.I.E., I.C.S.

President, Countess of Dufferin's Fund, Berar Branch.

"I believe that there has not yet been any improvement in the work of indigenous dais in this Division since the Scholarships Fund was established. It is only recently that any systematic attempt has been made to influence these women, and up to date a real beginning has been made only in Akola with the assistance of Dr. George of the Women's Medical Service. Experience shows that it is very difficult to make any impression on the ignorance and superstition of this class. The Berar Branch Committee recently addressed Municipal Committees on the subject of the supervision and training of indigenous dais, suggesting the following measures, namely :—

(*a*) that the Lady Doctor, in the four towns of Berar where we have them, should receive copies of Birth Returns, showing the name of the dai, if any, who attended the birth and copies of all returns of Infant Deaths, *i.e.*, deaths within one year of birth ;

(*b*) that a sum of annas four for every attendance at the Lady Doctor's hour of instruction once or twice a week should be paid to

indigenous dais. On these occasions it is intended that the Lady Doctor should give elementary instruction in midwifery and also give the dais some general information regarding epidemic disease and domestic hygiene ;

(*c*) that the Lady Doctor should give lectures on midwifery and domestic hygiene to ladies of the higher classes who have received some education and are capable of influencing their neighbours in regard to these matters ;

(*d*) that every Municipality in which a Lady Doctor is stationed should employ visiting midwives who have passed the course prescribed for the holders of Victoria Memorial Scholarships. These women should be used to visit labour cases, ascertain whether the dais were observing the instructions given them by the Lady Doctor, and report regularly the results of their inspections to the Lady Doctor.

Several Committees have accepted these suggestions in whole or in part, but it cannot be said that any real beginning has been made except in Akola.

With the view of developing the intelligence of the class of women from whom the greater number of indigenous dais are recruited, the Administration at my suggestion has established 60 scholarships tenable by the children of these classes in Primary Girls' Schools in Berar. The children are not *bound* to go through any course of instruction in midwifery after the completion of their primary education, but it is proposed to keep an eye on them and, after they have been married and have attained the age of 17 or 18 years, to try and persuade them to take the full course of instruction in midwifery. This scheme has only been in force two years, but the scholarships have been well taken up. Experience shows that, contrary to expectation, there is no serious objection to the admission of these low caste girls in girls' schools in the more advanced towns, provided the girls are decently clothed. School Committees have in some instances provided good clothes for them. I should mention that this scheme is an adaptation of an arrangement originally made by Dr. Agnes Henderson in Nagpur. The weak point of this attempt to prepare the ground in which the seed is to be sown is that the girls finish their Primary Course at 13 or 14 years of age and some years must elapse before they could be given any instruction in midwifery. It has been suggested that they might be employed as nurses in crèches which could be usefully established in manufacturing centres ; but this development is not likely to come for some time in Berar at least. Meantime, all we can do is to keep an eye on the girls and, after they have been married and are strong enough to take the course, try and induce them to go through the midwife's course.

I believe the scheme suggested by the Berar Branch Committee to Municipal Committees in Berar, together with the education of the dai children, will lay the foundation of an improved service of dais ; but to give really satisfactory results these measures require the support of the law which they have not

yet got. Municipalities should be empowered to license dais. The Honourable the Chief Commissioner, a couple of years ago, agreed when discussing the subject with Dr. George and myself that provision to this effect should be made in the amended Municipal Law for the Central Provinces and Berar, which is expected to be brought before the Council before long. For the present we are beginning in Berar to attempt an informal licensing system which is already in force in the Jubbulpore Municipality and will perhaps be better than nothing.

But more important than this is the creation of an entirely new conception of the status of the profession of nursing in India. The indigenous dais are, of course, drawn from the lowest class of the population ; no one expects from them a high standard of duty or even of decency. Until recent years these women have been the only professional nurses in India, and Indians have not yet fully realised that the nursing profession is essentially an honourable one. The prejudice against women who are unmarried or widows and support themselves makes it still more difficult for Indians to regard a nurse with the respect to which her profession entitles her. This reacts on the nurses themselves and the result is that a large proportion of them do not live respectable lives. I am speaking now not of the indigenous dais but of those of better class who have received a training at the expense of the Fund. These women are regarded as fair game and, if they are not so complacent as they are expected to be, are exposed to the risk of slander. If we wish to improve the status of the nursing profession and make it easier for the nurses to live a decent life, we must have the backing of Indian women of the educated classes. This will come in time, and its arrival will be hastened by classes of instruction such as I have mentioned above. In course of time Indian women of the more influential classes will be able to co-operate actively in the administration of the various measures that may be taken to reduce infant mortality and this by bringing them into closer touch with the dais and by showing them how important it is that these women should have a high sense of duty, will make them more solicitous for their welfare ; this again will make the profession less undesirable and the class of women recruited to it will improve. The appointment of trained women Sanitary Inspectors in some of the larger towns would (if they were of the right sort) have a marked effect in improving the whole position by spreading knowledge of the importance of domestic hygiene in all its branches."

V.—BALUCHISTAN.

Lt.-Colonel A. L. DUKE, I.M.S., *Chief Medical Officer, Honorary Secretary, V. M. S. Fund, Baluchistan Centre.*

" There is no doubt that the scheme inaugurated in Quetta in 1914 and carried out by Miss Stuart and Miss Cardozo has had an enormous success in improving the work of the local dais and in reducing the maternal mortality,

There are no statistics to show what the mortality among women following on child-birth was before, but it was well known to be terribly high ; since the dais have been trained and supervised, the deaths among the women attended by them and reported and consequently once visited by a lady doctor have been practically *nil*. During the year from July 1916 to June 1917 689 confinement cases were supervised of which 49 were abnormal and among these there was not a single death directly due to labour, one woman died on the 13th day of embolism, having refused treatment, and one on the 10th day of pneumonia. "

VI.—BIHAR AND ORISSA.

The Hon'ble Colonel G. J. H. Bell, C.I.E., I.M.S., *Inspector-General, Civil Hospitals, Bihar and Orissa, Honorary Secretary, V. M. S. Fund, B. and O. Centre.*

" By raising the rate of stipends to dai pupils better results may be expected in some districts. Compulsory training for the young indigenous dais has been suggested while the older women might be induced to attend lectures. One Civil Surgeon thinks that the period of training should be extended from one to two years. I agree with the proposal that District Boards and Municipalities may be moved to provide for the employment of trained dais at village hospitals in the remote interior of districts. The entertainment of a Lady Doctor, graduate, or licentiate at each Sub-Divisional hospital would be a measure calculated to lead to better results. "

VII.—ASSAM.

The Hon'ble Colonel H. E. Banatvala, I.M.S., *Inspector-General, Civil Hospitals, Assam, Honorary Secretary, V. M. S. Fund, Assam Branch.*

" The scheme has been started quite recently and it is not possible to make any definite proposals ; but I intend to offer a small amount to each of the dais who have passed through our course of lectures for every case of labour they attend, whether normal or not, where they invite the Lady Doctor to be present. This will, in a measure, enable us to see how far they have profited by their teaching, and to correct their mistakes. "

VIII.—INDIAN STATES.

Gwalior.

The Chief Medical Officer and Sanitary Commissioner, *Gwalior.*

" In order to obtain better results the untrained dais should be stopped by law to attend to labour and Gynæcological cases. Attempts must also be made to induce the higher class of women to join the training classes. "

Baroda.

THE CHIEF MEDICAL OFFICER, *Baroda.*

"There is at present no system of supervision of the work of dais, but a Dai Act has been approved and is in the process of being drafted by His Highness' Government for the registration of trained dais and the licensing of untrained dais practising in the city, with penal clauses against unlicensed dais, powers to remove licenses in cases of gross negligence, for not calling in medical aid, etc. At the same time there is a scheme under approval for extending State Maternity Relief in the City, ultimately bringing the work of dais under the greater supervision of Lady Doctors, Health Visitors and Trained Midwives, and with greater facilities for the instruction of practising dais.

The scheme suggested for obtaining better results is the one shown above for adoption in this State by bringing dais under a certain measure of trained persons engaged in District Maternity work so as to make supervision possible over the work of dais."

Bhopal.

THE SUPERINTENDENT, *Lady Lansdowne Hospital, Bhopal.*

"The Victoria Memorial Scholarships Fund has greatly improved the work of the Native Dais who now conduct confinement cases more intelligently, and thereby the mortality during child-birth is lessened. In Bhopal City their work was up till now supervised by the Superintendent of the Lady Lansdowne Hospital. It is handed over to the Health Officer who employs Sub-Assistant females under him to supervise their work. I believe better results can only be obtained in future by admitting as scholars only those women who are under the age of 25 and have learnt to read and write a little as they then can take a few notes during the lectures given to them."

Kashmir.

THE SUPERINTENDENT, *Diamond Jubilee Hospital, Srinagar, Kashmir.*

"*All* dais should be registered, and if given a few pice for registration of births *at the Zenana Hospital* they would do so.

They should be compelled to attend instruction here.

All cases should be visited and verified by Zenana Hospital staff.

Public notices should be posted up, with lists of fully trained dafs.

Rewards should be given, as in Amritsar, for safely conducted cases, or difficult ones brought to hospital in time."

Hyderabad.

THE SENIOR VISITING SURGEON, *Victoria Zenana Hospital, Hyderabad, Deccan.*

" Better results could be obtained if the indigenous dais could be supervised, or induced to train, or prevented from practising, but that is impossible in this city."

Hathwa Raj.

THE ASSISTANT SURGEON, *Hathwa Raj.*

" To remedy this defect of lack of supervision it would be better to move the District Civil Surgeons and devise a scheme through them to adopt measures and induce the travelling doctors in distant areas to attend to the public call on reasonable and moderate professional fees (in payable cases) or to work gratis in poor cases who deserve kindness and free medical aid. Apart from this it would be far better to retain the services of a Lady Doctor, at least in each Sub-Division, and that passed dais, so far as they may be available, be posted in every village of five miles jurisdiction to attend immediately to the public call. The dais would give the first aid to the patient and will inform the Sub-Divisional Lady Doctor to arrive and supervise the work of the former. The females of this part of the country feel the utmost delicacy in exposing themselves to a male doctor and it is difficult to afford them the proper relief unless there be a Lady Doctor. The services of a Lady Doctor are therefore very essential. The usual duty of the latter would be to work in the Sub-Divisional Dispensary, while her special duty should be to attend to the mofussil calls within her jurisdiction. She should also try and induce the Chamar caste women of the villages to join the nearest dai class training, who will gladly accede to the offer as there is an attraction aid available for them from the Fund. In time these dais will turn out useful hands for the purpose and will easily be able to take up the vacancies for the local dais."

CHAPTER III.—PAPERS BY MEDICAL WOMEN ON "THE IMPROVEMENTS OF THE CONDITIONS OF CHILD-BIRTH IN INDIA".

BY

* Dagmar Florence Curjel, M.B., Ch.B., M.D. (Glasgow),
Women's Medical Service, India.

In view of the overwhelming necessity of saving infant life at a time of unparalleled drain on the manhood and womanhood of every nation the problem of improving the conditions of child-birth is engaging attention in all parts of the world—the problem is International. [*Appendix I, sub-section 1.*]

Each country needs the healthiest and strongest children it can obtain in order to keep abreast in the keen struggle for existence.

The decreasing birth-rate in nearly every country has shown that, in order to keep up numbers, it is necessary to reduce Infant Mortality at a greater pace; and International Conferences held in Berlin (1911) and London (1913) to consider the improvement of the conditions of child-birth found that the drop is common to all European countries, but greater in France than elsewhere. [*Appendix I, sub-sections 1, 2, 3.*]

The low birth-rate is present in all sections of the community, urban and rural, rich and poor, worker and intellectual alike, but it is shown that the most prolific are on the whole the least fitted for the important task of rearing the next generation, that there is too little restraint upon the feeble-minded and physically diseased. [*Appendix I, sub-sections 4, 5, 6.*]

Infant Mortality is highest for the first four weeks after birth, and is so heavy that, were the same rate to continue all through the first year, there would be no infants alive at the end of the first year. [*Appendix II, sub-section 1.*]

The population of a country depends largely on two important factors, *viz.*, the birth-rate, and the proportion of infant mortality to that birth-rate, and on this depends to some extent the health and strength of a nation as a whole. [*Appendix I, sub-section 1, "Natural Increase".*]

In the natural order of events mortality is greatest at the two extremes of life; we ought not to refer to infant mortality as though it were simply a leakage in human life and thus proceed to suggest some specific remedy. Some of the very causes that are at work in producing an abnormal death-rate bring also impairment to the health of the mother, and give rise to infantile and child disease. A high rate of infant mortality implies not only a wastage of life, but also that a large number of our fellow-citizens are living under wretched conditions. [*Appendix II, sub-sections 1, 2, 3, 4, 5, 6, 7, 12.*]

* First prize.

Infant sickness not only leads to a deplorable waste of human life, but sows the seeds of weakness, deformity, and impaired vitality in those who survive. [*Appendix II, sub-sections 8, 9, 10, 11.*]

If we consider what is to be learnt from our International Survey of the problems of infant mortality [*Appendix I and Appendix II*], and of the ways in which people in different parts of the world are endeavouring to improve the conditions of child-birth [*Appendix III and Appendix IV*], a survey of the most recent Indian statistics will readily convince us that some action is necessary for improving the present conditions of child-birth in India. [*Appendix VI, sub-section 1.*]

The average death-rate per mille for the whole of India is 30·9, as against 14·2 in the United Kingdom and 9·5 in New Zealand; in other words, India occupies the unenviable position of possessing the second highest death-rate in the world. [*Appendix VI, sub-sections 2, 3, 4, 5, 6.*]

In India not only is the infant mortality very high, but the number of female deaths at the reproductive ages is also very considerable. [*Appendix VI, sub-section 1.*]

We have considered in some detail the conditions which are recognised by social workers as contributing to the infant mortality in other parts of the world, *viz.*, poverty, bad housing, ignorance, and disease. [*Appendix II.*]

In India, in addition, there are two other causes which contribute to the loss of infant life, and also cause the large number of female deaths at the reproductive ages, *viz.* (1) child-marriage, and (2) unskilled midwifery at the time of confinement, resulting from the incompetency of the Indian midwife or "dai." [*Appendix V, sub-sections 1A, 1B, 1C, and 2.*]

It is necessary to estimate the relative value of each of these causes in contributing to the unsatisfactory conditions of child-birth present in India. [*Appendix V, sub-sections 3, 4.*]

It then remains to regard the various ways in which the conditions of child-birth are being improved, and the infant mortality lowered internationally [*Appendix III and Appendix IV*], and to consider how far the experience of other countries may be of use in solving the problem of improving the conditions of child-birth in India. [*Appendix V, sub-sections 3, 4; Appendix VI, sub-sections 2, 3, 5, 6.*]

The founding by Her Excellency the Marchioness of Dufferin of the Fund which bears her name may be said to be the first definite step forward in improving the conditions of child-birth since its object is to bring medical aid within the reach of every Indian woman.

The Victoria Memorial Scholarships Fund for the training of Indian midwives, started in 1901 by Her Excellency the late Lady Curzon, was a further step towards the same goal.

India is also much indebted to the various medical women working in India, and especially to the early "pioneers", for drawing attention to, and

attempting to remedy, the unfavourable conditions of life among Indian women and children.

It is now, however, being realised that the problem is too large and vital to be left entirely to voluntary effort, and it is necessary that the public conscience be awakened, and Municipal and Sanitary authorities, and the communities which elect them, appreciate the fact that to cure disease or to palliate its sequelæ cost, in the long run, infinitely more than to prevent disease in children.

When the country learns that the preservation of the health of the child is the duty of the people there should be less reluctance to find the necessary money.

If the good that has followed in a few localities through attempts to improve the conditions of child-birth in India be seen by the citizens of other localities in its true proportion the victory of reform will be won. [*Appendix V, sub-sections 1B, 1C, Appendix VI, sub-sections 5, 6.*]

What is necessary is that the community should know on which side true economy lies, and for this is necessary the dissemination of accurate information, free of party spirit and authoritative in tone, and special efforts to draw the attention of the people, as well as of the local authorities, to the value of child-life, and to the need of doing everything possible to ensure a healthy motherhood and babyhood.

The following suggestions present themselves for further improvement of the conditions of child-birth in India :—

I. Improving the conditions for mother and child at the time of confinement, by providing an adequate supply of qualified women doctors, trained nurses, and health visitors, and by increasing the number of women's hospitals and dispensaries. Each town must necessarily have its own scheme, modified to the requirements of its own special needs, but the following might well be taken as models :—

(*a*) For larger towns, the schemes already working in Bombay, Calcutta, Madras, Delhi. [*Appendix VI, sub-sections 1, 4, 5, 6.*]

(*b*) For smaller towns, the training and supervision of indigenous dais, as in Quetta, Ferozepur, Nagpur, etc. [*Appendix V, sub-section 1B*], and the provision of trained dais [*Appendix V, sub-section 1C and Appendix VI, sub-section 6.*]

It is possible that in certain areas *all* these three methods might be in use at the same time. [*Appendix VI, sub-section 6.*]

In rural districts the provision of adequate medical aid presents special difficulties owing to the poverty of the inhabitants in such districts, but the problem may be solved in some such way as is suggested in *Appendix VII, sub-section 2.*

II. In improving the environment of the mother and of the child during its ante-natal and infant life. For this is necessary the

improving of bad-housing and defective sanitation. [*Appendix V, sub-sections 3, 4.*]

III. The education of the Public, and especially of the women of India, as to the necessity of improving the conditions of child-birth in India by drawing attention to the causes of the high maternal and infant mortality. [*Appendix V, sub-sections IA, 2, 3, 4*] by means of :—

(*a*) Visits to the homes by health visitors and voluntary workers. [*Appendix IV and Appendix VI, sub-sections 5, 6.*]

(*b*) Public Lectures. [Special meetings for women and purdah-clubs.] [*Appendix V, sub-section III, "Purdah".*]

(*c*) Teaching domestic hygiene in schools.

(*d*) By the provision of some definite scheme to enlist the co-operation of all classes throughout India by means of which individual effort to improve the conditions of mothers and children would be linked together. I think it is a good suggestion that after the war the various Red Cross "centres" might well be used for introducing some such schemes. [*Appendix VII, sub-section 1.*]

In this way the urgency of the subject would be put before the public in every town, and the local committees, and especially its women members, would be in a position (being advised by some central authority), to organise work according to the special needs of its locality.

In conclusion, the real solution of the problem lies in educating the Indian woman in the case of her own health, and that of her offspring, and in the elements of domestic hygiene, by every possible means.

It seems to me that the question is truly one of *home* rule—for the *woman* is the heart of the Indian home, and it is *she* who will be the decisive factor in improving the conditions of child-birth in India.

List of Appendices.

International.

I. The International aspect of infant mortality.

II. Adverse influence of poverty, ignorance, bad-housing, and disease on infant mortality.

III. Ways in which infant mortality is being lowered, and the conditions of child-birth improved.

IV. The conditions of health visitors, and other workers for improving the conditions of child-birth.

India.

V. The causes of the unfavourable conditions of child-birth in India.

VI. Reports on the present conditions of child-birth in India.

VII. Schemes for improving the conditions of child-birth in India.

VIII. A list of photographs illustrating this Report. (Omitted in this publication).

APPENDIX I.

The International Aspect of Infant Mortality.

Sub-section.

(1) A comparison of the Infant Mortality rate in various countries.

(2) Infant Mortality figures for England and Wales.

(3) Local Government Board report showing how both the *actual birth-rate* and *the natural rate of increase*, have diminished in England and Wales.

(4) The Incidence of Infant Mortality in England and Wales.

(5) The Variation of Infant Mortality in different wards of the same town.

(6) Jewish population and Infant Mortality.

(1) Recent Reports on Infant Mortality.

(I) *A comparison* of the Infant Mortality rate in *various countries*, using as a basis the most recent available five years average. Russia and Hungary head the list with 254 and 204. New Zealand is the lowest with 59.

Norway gives a satisfactory return of 70 and the Commonwealth of Australia 72.

In *New Zealand* the rate has dropped steadily during the 45 years of observation, while it is only since 1903 that there has been any marked decline in the Australian rate. The fall has taken place *chiefly in the* urban areas, the reduction being similar in kind in the rural districts.

In *France* the annual number of births which in 1876 slightly exceeded 1,000,000 had fallen in 1913 to a little over 745,000. As usual with a low birth-rate infant mortality

also stands at a low figure, but the decrease does not compensate for such a fall in the birth-rate.

(II) *Irish Vital Statistics.*—Sir William Thompson's Report (Report of the Registrar-General for Ireland, 1915). Great *disparity* is shown in the loss of infant life in *the urban as compared* with the rural districts of Ireland, the rate of infant mortality in the 27 principal towns averaging 134 per 1,000, or no less than 92 per cent in excess of that in the remainder of the country. If the rate of mortality in the town districts had been the same as in the rest of Ireland, there would have been in 1915, *a saving of 2,072* infant lives.

(III) Seventy-eighth Annual Report of the Registrar-General (England). (*The Vital Statistics for the first year of the War.*) Sir Bernard Mallet's report for 1915. Of the total deaths registered in England and Wales in 1915, *almost 16 per cent.* were those of infants under the age of one year, corresponding to a *mortality of 110* per 1,000 births. The *immediate chances* of survival differ but little at birth in the towns as compared with the country, but the noxious influences appear and make themselves felt increasingly as the first year of life progresses, and to a still greater extent in the 2nd and 3rd years, when *the urban excess* generally approaches 100 per cent.

(IV) Supplement to the Forty-fifth Annual Report of the Local Government Board. *Report of the Medical Officer to the Local Government Board* (England). Sir Arthur Newsholme states in discussing Child-Mortality *that the relatively low death-rate in rural districts is obtainable* under urban conditions by enlightened administrative measures.

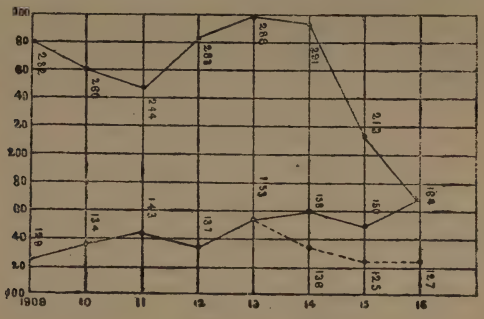
Natural Increase.

Census Returns show that in countries *where the birth-rate is high, the death-rate is usually high also.*

Average birth and death-rates per 1,000 living for the decennial period 1902-11, for some important countries.

	Birth Rate.	*Death Rate.*
Russia (European)	48·47	31·41
	(1896-1905)	(1896-1905)
India	*38·58*	*34·2*
Ceylon	38·12	29·5
Chili	38·07	30·46
Hungary	36·80	25·68
Germany	32·31	18·39
Japan	32·85	20·86
	(1900-09)	(1900-09)
Scotland	27·99	16·33
England and Wales	26·8	15·15
New Zealand	26·79	9·76
Australian Commonwealth	26·52	11·11
Sweden	26·17	14·68
Ireland	23·3	17·28
France	20·25	17·34

The Mortality of the Civil Population in Germany during 3 war years.



The excess of births before and during the war. (Upper curve is the birth curve, the lower curve is the mortality curve.) The dotted line shows the mortality of the civil population during three war years.

The enquiry was made in a small industrial town of about 9,000 inhabitants in Germany. The total births and deaths are given. In 1911 the infantile mortality owing to unfavourable climatic conditions was high. In peace time the average deaths to 100 living born is 21. In 1911 26 per cent. In 1915 only 20·4 per cent. died, in 1916 19·5 per cent, so that there has been not only no increase of the infantile mortality, but a slight improvement in 1916, a year in which there was a limitation of food supply.

Still births in no way affected by war. The average yearly = 6·6: in 1915, 3, and 1916, 10 cases, as variable as in the previous year 14·7 per 100 births. The mortality of infants and children under one year is interesting from the peace average 59 (in last year before war), it sank in 1915 to 43 and 1916 to 30. So the absolute numbers fell, without (in the case of infantile mortality which is independent of number of births) any considerable change.

(*Reference.*—Wirkungen des krieges auf die sterblichkeitsverhaltnisse. Von Dr. G. Halsen (Oggersheim, Pfalz).

Deutsche medizinische wochenschrift Nr. 35, 30 August 1917).

In war year 1915 the proportion of infantile and total mortality sank distinctly: only 36·8 per 100 deaths were under one year, and in 1916 it was further improved to 31·4.

Conclusions.

1. The number of births was diminished and following that the number of deaths of children under one year both absolutely and in relation to the total number of deaths, but no alteration of infantile mortality can be demonstrated.

2. No alteration of mortality from Tubercular disease was shown. There is a higher number of fatal cases from cancer.

3. Also the general mortality, inclusive of war loss, has scarcely risen.

4. On the other hand the deaths over 60 years have distinctly diminished, both absolutely and in relation to total mortality.

[I am indebted to Major Greig, I.M.S., C.I.E., etc., for the above extract from the "Deutsche Medizinische Wochenschrift."]

The diminished food supply with the various substitutes has had no influence on the mortality of the greater proportion of the population, specially in infantile mortality the war has had no unfavourable action.

The *Conclusion* is that the diminished food supply, together with the various substitutes, has had no unfavourable action on Infant Mortality (does this show that the feeding of young infants in Germany, as in other countries, in peace time, was often injudicious ?).

(2) England and Wales.

Infant Mortality Figures for England and Wales.

Infant Mortality in England and Wales more or less stationary till 1905, since then as result of organised effort has been steadily *decreasing.*

Meaning of the term "Infant Mortality."

Special *meaning of the term* Infant Mortality being the ratio which the number of infants (infant life being the period from birth to end of first year) who die in any one year bears to the number of births in that year.

Year.	*Infant Mortality. Per 1,000 births.*	*Year.*	*Infant Mortality. Per 1,000 births.*
1879	135	1896	148
1880	153	1897	156
1881	130	1898	160
1882	141	1899	163
1883	137	1900	154
1884	147	1901	151
1885	138	1902	133
1886	149	1903	132
1887	145	1904	145
1888	136	1905	128
1889	144	1906	133
1890	151	1907	118
1891	151	1908	121
1892	148	1909	109
1893	159	1910	105
1894	137	1911	*130
1895	161	1912	95

* 1911 had an exceptionally hot and trying summer producing conditions inimical to infant health.

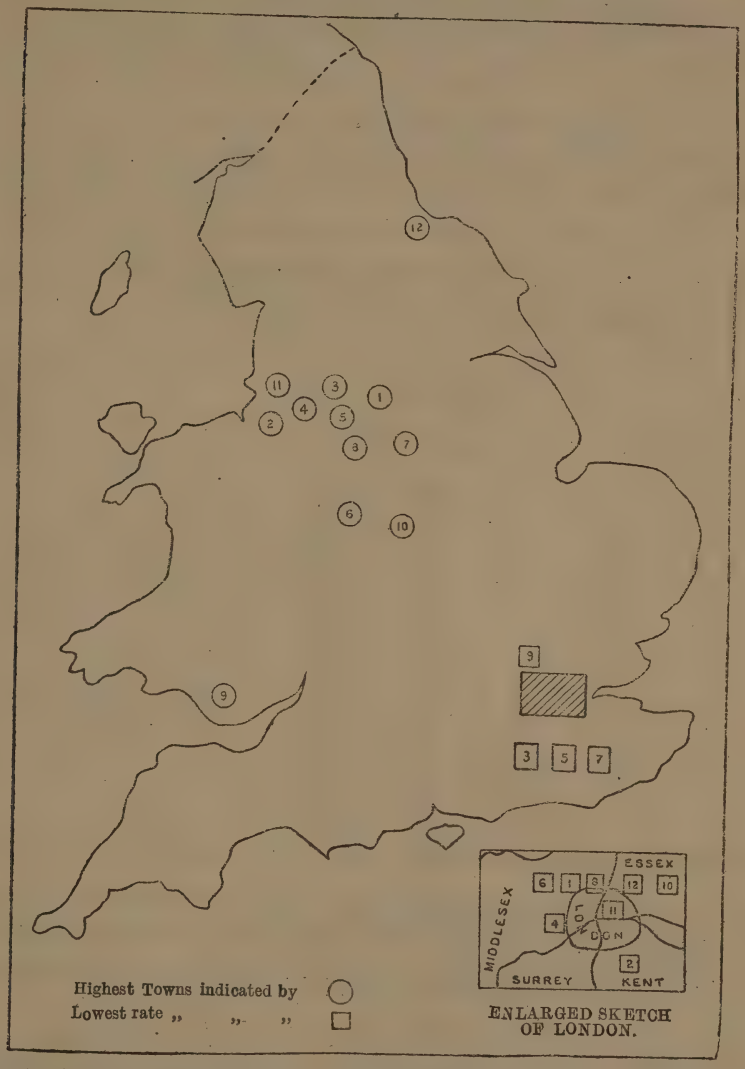
(3) Local Government Board Report on Infant Mortality 1912-1913, showing how both the actual birth-rate and the natural rate of increase have diminished in England and Wales.

—	1876-80.	1881-85.	1886-90.	1891-95.	1896-1900	1901-05.	1906-10.
Birth Rate	35·3	33·5	31·4	30·5	29·3	28·2	26·3
Infant Mortality Rate per 1,000 Births.	145	139	145	151	156	138	117
Rate of Natural Increase	14·6	14·1	12·6	11·8	11·6	12·1	11·6

(By *the expression Birth Rate* is understood the proportion which all births in a community bear to a thousand persons in such a community.)

(4) The Incidence of Infant Mortality in England and Wales.

Incidence of Infantile Mortality showing Towns having the 12 Highest and 12 Lowest Rates. 1907-10.



From the "Second Report on Infant and Child Mortality," 1912-13. By the Medical Officer of the Board (Dr. Arthur Newsholme).

Infant Mortality, 1907-10.

12 Highest Towns. (Indicated on Map by circles.)			*12 Lowest Towns.* (Indicated on map by squares.)		
1	Stalybridge	189·0	1	Hornsey	66·8
2	Ince in Makerfield	185·4	2	Bromley	68·1
3	Burnley	171·4	3	Guildford	69·6
4	Farnworth	164·0	4	Hampstead	71·4
5	Ashton-under-Lyne	163·7	5	Reigate	71·9
6	Stoke-on-Trent	161·9	6	Finchley	72·3
7	Chesterfield	158·5	7	Tunbridge Wells	72·7
8	Hyde	157·3	8	Wood Green	73·0
9	Aberdare	156·9	9	Watford	73·8
10	Ilkeston	156·6	10	Ilford	75·0
11	Wigan	155·3	11	Holborn	76·6
12	Middlesborough	154·6	12	Leyton	77·8

The *counties* which have the highest Infant Mortality are Lancashire, Durham, Glamorganshire, Nottinghamshire, Staffordshire, the West Riding of Yorkshire, Northumberland and Warwickshire. In all of these *are large industrial centres. Counties* almost *entirely agricultural,* such as Hereford, Somerset, Wiltshire and Dorset, have a very low Infant Mortality

We *find however that adjacent towns in a thickly populated district* often have an Infant Mortality Rate *quite different* from each other. For instance in Lancashire the adjacent towns of Burnley and Nelson, there is a *variation of 60 per cent.* in the Infant Mortality Rate. These two towns closely resemble each other in most respects, they are both cotton-weaving towns situated within a few miles of each other, yet in 1911 the Infant Mortality of the former was *210 per 1,000,* and in the latter only *77 per 1,000. It would appear,* therefore, that neither occupational differences, the employment of mothers, the degree of poverty, are enough to explain the wide difference. The conditions of life in the two towns are similar.

Burnley is, however, *an old town* and Nelson *a modern one*, which may in part account for the difference.

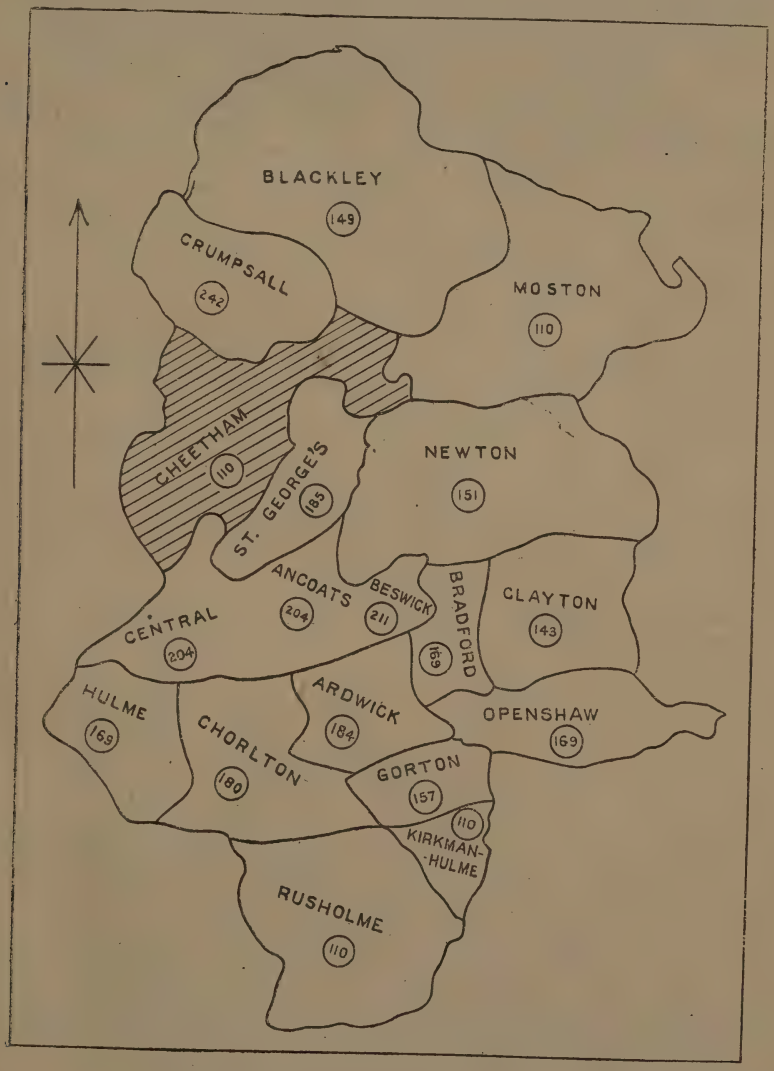
Counties which as a whole have a low Infant Mortality also contain *neighbouring towns* which *vary very much* in the degree of Infant Mortality. For instance in Kent, there is a difference of 65 per cent. between Bromley and Chatham.

These differences in the Infant Mortality Rate among towns so similar and in such close proximity to each other *show that the cause of Infant Mortality* is probably *a complex one* and not assignable to any one factor.

(5) The Variations of Infant Mortality in Different Wards of the same Town.

Incidence of Infant Mortality in different areas in Manchester, 1911.

From the "Second Report on Infant and Child Mortality." By the Medical Officer of the Board (Dr. Arthur Newsholme), 1912-13.



The different parts of a Town also vary in their Infant Mortality Rate. There is often a difference of 50 or even 100 per cent. in the different parts of the same Town.

In the industrial and densely populated districts there exist more dirt, crowding together, more women-workers, more infectious disease, and in the summer more diarrhœa. All these conditions are inimical to the Infant.

(6) Jewish Population and Infant Mortality.

In nearly all large towns Jews live together in a special quarter. In Manchester the part of the city known as *Cheetham* is almost entirely inhabited by Jews. In 1911 this district had an Infant Mortality Rate *of 110*, compared with *154* for the whole of Manchester.

When it is remembered that the Jews live in the poorer parts of towns, where there is often over-crowding, defective housing, and a good deal of poverty, it is remarkable that they are able to rear and bring up their children better than Non-Jewish people in more favourable circumstances. *The reason* for this is the Jewish parents *look after their children* extremely well: the *mothers stay at home* and *breast feed their babies*, and tend the other children in a most careful way. She makes almost any sacrifice for their welfare and gives them *regular meals* and *wholesome food cooked* in a proper way. The Jew is scrupulous about what he puts into his own mouth, and the mouths of his children, and he smokes as little as he drinks.

APPENDIX II.

Adverse Influence of Poverty, Ignorance, Bad Housing and Disease on Infant Mortality.

Sub-section.

(1) Relationship between the Father's occupations and Infant Mortality.
(2) Relationship between rateable value of dwelling houses and Infant Mortality.
(3) Proportion of deaths among different classes of the population in Germany.
(4) The relationship of the amount of the Father's wage to Infant Mortality.
(5) The Infant Mortality among different classes in Birmingham.
(6) The Infant Mortality in the Borough of Finsbury, classified according to the number of rooms occupied by the family.
(7) Observations upon the Natural History of Epidemic Diarrhœa.
(8) Ante-Natal Nature and Physique of Mother and its influence on the child, and the question of the employment of working women.
(9) The Relation of Improper feeding to Infant Mortality.
(10) Alcohol in its relation to Infant Mortality.
(11) Preventable Diseases which help to increase Infant Mortality.
(12) Depopulation as a cause of the declining Birth-rate.

Adverse Influence of Poverty, Ignorance and Bad Housing on Infant Mortality. (From the Annual Report of the Registrar-General, 1912.)

(1) Relationship between the Father's occupation and Infant Mortality.

Father's Occupation.

—	No. of Births.	Total Deaths.	Infant Mortality in Months.			
			0—1	1—3	3—6	6—12
Group I.						
Artists, Merchants, Medical Practitioners, Solicitors, Clergymen, Army and Navy Officers, etc.	5,658	42	21·0	6·2	6·2	8·1
Group II.						
Foundry, Dock, Factory Labourers, Iron workers, Navvies, Hawkers, Flax and Hemp workers, etc.	80,949	171	46·3	31·7	36·4	56·8

In Group I (with a better environment), the Infant Mortality in the 1st month equals that of the whole of the rest of the year.

In Group II, there is a steady Infant Mortality throughout the whole of the first year.

A comparison between the two *shows* that *Infant Mortality is more preventable in the later than earlier months, given* proper and favourable conditions.

(*ii*) *Sir Arthur Newsholme, Medical Officer* to the Local Government Board, reports (1915) that he does not consider the ignorance of the working-class *Mother to be greater* than that of Mothers in other classes of society, *but her ignorance is more dangerous* because associated with relative social helplessness.

THE INFLUENCE OF POVERTY ON INFANT MORTALITY.

(*2*) *Relationship between rateable value of dwelling houses and Infant Mortality.* (*Annual Report of Medical Officer of Health for Bradford 1911.*)

Rateable Value of House.	£6 and under.	£6—8.	£8—12.	Over £12.
Infant Mortality Rates per 1,000 births .	163	128	123	88

(*3*) *Proportion of Deaths among different classes of the Population in Germany.* (*Given by Wolf, from the result of investigations at Erfurt.*)

(*ii*) Babies out of 1,000 died under one year old among the—

Working class	505
Middle class	173
Rich class	89

REPORT ON INFANT MORTALITY FOR CITY OF BIRMINGHAM, 1912.

(*4*) *The Relationship of the amount of Father's Wage to Infant Mortality, 1912.*

(*iii*) The Infant Mortality *is greater* in those families *where the father earns less* than £1 each week, and *less where he earns more* than £1 a week.

	Father out of work or earning less than £1 a week.		Father earning £1 a week or over.	
	Year. 1910.	Year. 1909.	Year. 1910.	Year. 1909.
Total . . .	196	211	127	146

REPORT OF MEDICAL OFFICER OF HEALTH FOR BIRMINGHAM, 1910.

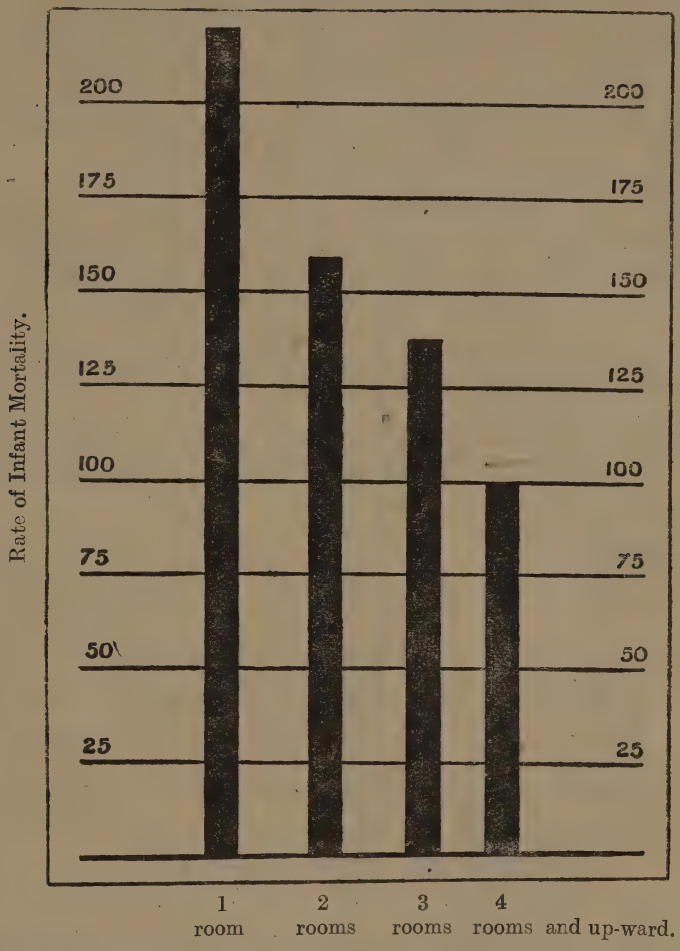
(*5*) *The Infant Mortality among different classes in Birmingham.*

	per 1,000.
(*iv*) Infant Mortality *among poor in city*	200
„ „ „ *middle class and rich*	50

BAD HOUSING AND DEFECTIVE SANITATION IN RELATION TO INFANT MORTALITY.

(*i*) An *insanitary* dwelling is a *costly asset* not only to the Family that lives there, but to the Community at large.

(6) *Infant mortality per 1,000 births in the Metrolpolitan Borough of Finsbury, 1915, classified according to the number of rooms occupied by the family.*



(7) "*Observations upon the Natural History of Epidemic Diarrhœa,*" *by O. H. Peters, Cambridge University Press, 1911.*

(*ii*) *Conclusion.*—It is the *dirtiness* of the household which increases the incidence of the disease, at the time of year when the disease is prevalent. The dirtiness is probably due to *carelessness in dealing with excreta,* particularly of young children.

Diarrhœa is *especially prevalent* in those areas where *conservancy methods* of dealing with excreta continues,—there is also an *excess of flies* in such places.

Reference.—(*i*) Flies in Relation to Disease, by G. S. Graham Smith, Cambridge Public Health Series, 1914.

(*8*) *Ante-natal Nature and Physique of Mother influences the Child.*

(*i*) Experience shows (and this is proved by animal experiments) that not only must *the mother be well nourished* but she must *not perform too laborious work* before the birth of her child.

References—

Ante-natal Pathology and Hygiene "the Foetus."—Ballantyne (published by William Green & Sons).

Lancet, 1903, Part 21, Prochowinick.—"The Influence of Diet in Pregnancy on the weight of the offspring."

(*ii*) *Does employment affect the health of Infants* born to working women? (*Question discussed at International Conference* on Infant Mortality, London, 1913.)

Conclusion.—No special harm—

(*i*) *in pregnancy*, so long as the Mother has not to do hard manual work, and that she does not work right up to the day of her confinement.

(*ii*) *After child's birth*, the child may suffer—

(*a*) if it be weaned artificially,

(*b*) if it misses the Mother's care while she is at work.

(*Literature* on this subject can be obtained from the National Association for Prevention of Infant Mortality and for the Welfare of Infancy, 4, Tavistock Square, London, W. C.)

Ante-natal Physique of Mother influencing her Child.

Diagram, showing the state of the Mother before the child's Birth, *does affect* the condition and size of her child at Birth.

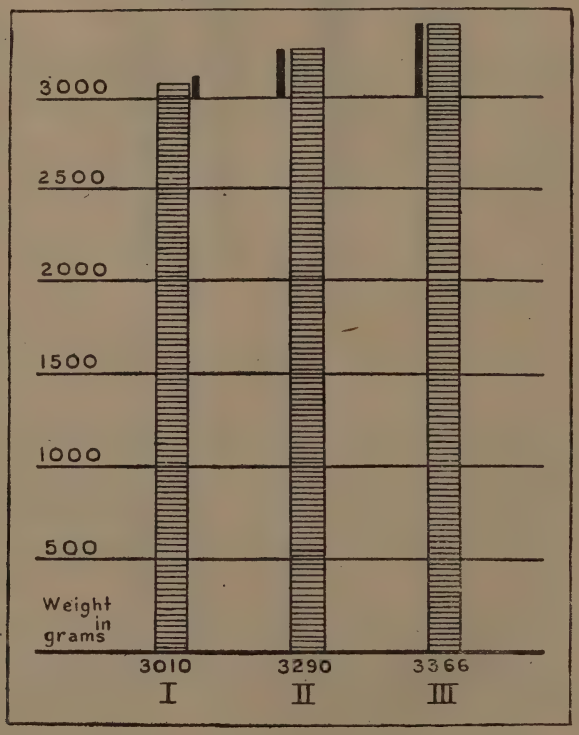
Average weight at Birth—

(*i*) of 500 children *whose Mothers* worked up to *the day* of confinement;

(*ii*) of 500 children whose mothers spent *10 days* before confinement in a pre-maternity home;

(*iii*) of 500 children whose mothers spent *more than 10 days* in a pre-maternity home.

(*From H. MacMurchy.*)



(9) *Improper feeding—its relation to Infant Mortality.*

(i) *Statistics in Salford (Manchester) 1910, from the report of the Medical Officer of Health.*

	No. of Births.	No. of Deaths.	Infant Mortality per 1,000 Births.
Babies fed on Breast alone	2,880	328	113·9
Patent Foods—Babies fed on Other foods. . . .	235	74	314·9

(ii) *Local Government Board Report. Food Report, No. 15, 1911.*

Condensed Milk.—"Dr. Coutt's Report *on an enquiry* as to *condensed milks* with special reference to their use as Infant Foods."

Conclusion.—It is *ignorance* and *poverty* which leads to feeding babies on condensed milk—but breast feeding is the greatest natural protection against disease (except in certain exceptional cases).

References—

(i) L. G. B. Food Report No. 18, 1913. Dr. W. C. Savage's report on Bacterial food-poisoning and Food Infections.

(ii) Food Report No. 20, 1914. Dr. Coutts and Mr. L. L. Baker, on the use of proprietary foods for Infant Feeding and the analysis and composition of some proprietary foods for infants.

(iii) *Impure Cows' Milk.*—The *Importance of Pure Milk (free from Tuberculosis and dirt)*, is shown in Report of the Local Government Board upon the Biological Properties of Milk, both of the Human Species and of cows, *considered in special relation* to Feeding of Infants.

Epidemic of Infantile Beri-beri, in the Philippines due to the use of canned milk.

Owing to the difficulty of getting clean cows' milk there has been a great increase in the use of "canned" whole milk for Infant feeding. In this the *antiscorbutic* properties *(vitamines) of milk are destroyed.*

There *followed* recently an *Epidemic* of *Infantile Beri-beri*, which was only controlled by adding *fresh substances* (containing vitamines) to the infants' diets. [*Phillippine Journal of Science, 1916.*]

(10) *Alcohol in its relation to Infant Mortality.*

Intemperance is closely bound up with poverty, *it is the mentally unstable people who fall into intemperate* habits because they have little will power to keep steady, *and not that* alcoholic parents produce feeble-minded children.

There is no doubt that the taking of alcohol by a Mother before the birth of her child has *the effect of* producing more poverty, which means *a weakly and less* healthy baby.

References—

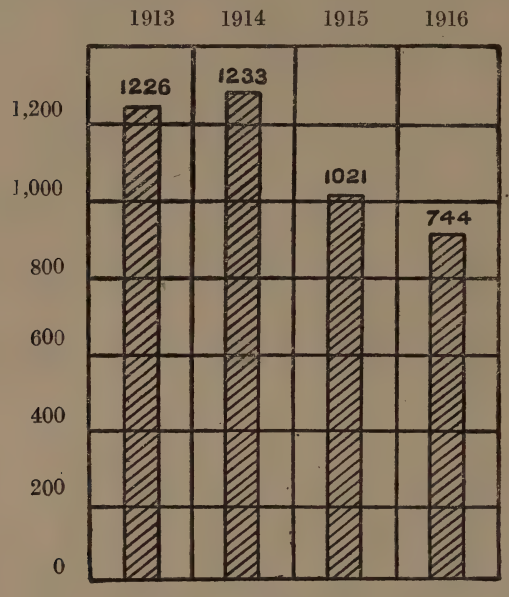
(i) Poverty, a study of Town Life. By B. S. Rowntree.
(ii) The Journal of Royal Statistical Society, January, 1912.
(iii) Report of Inter-departmental Committee on Physical Deterioration, 1904.
(iv) The Children of the Nation (page 252) Sir J. Gorst. (Methuen & Co.)

The Relation between Female Drunkenness and deaths of Infants from Overlying.

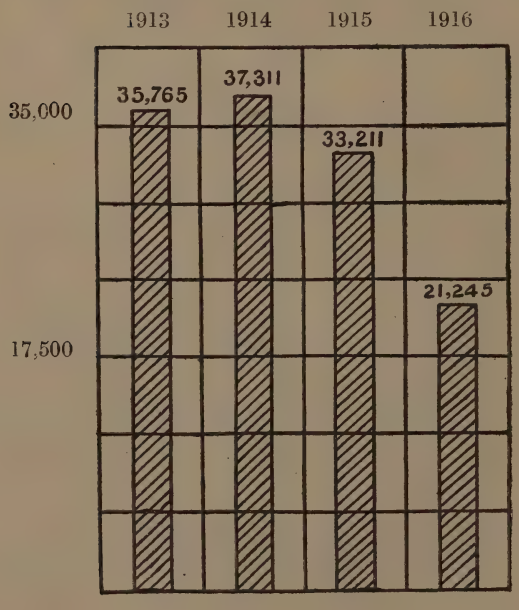
ENGLAND AND WALES.

(*From "The Times", 31st July 1917.*)

Deaths of Infants under one year of age from overlying.



Convictions for Drunkenness (Females).



(*11*) *Preventable Diseases which help to increase Infant Mortality.*

[Some Health *Authorities leave pamphlets* at all houses where there is an infant.]

(*i*) Diseases of the *Respiratory* System—Measles, Whooping-cough, Bronchitis, Pneumonia, Tuberculosis.

(*ii*) Diseases of the *Alimentary* System—Diarrhœa, Malnutrition and wasting, Enteritis.

(*iii*) *Accident or Negligence.*

(*iv*) *Congenital syphilis.*

Syphilis is even more *dangerous to the state* than to the individual. There is considerable evidence to show that a large number of apparently healthy infants are really infected with it, and the disease is only waiting, as it were, to appear in later life. (The use of the *Wassermann* test has thrown much light on syphilis *as the aetiological factor in many obscure infantile conditions.*) The *mortality* as the result of congenital syphilis occurs *very largely in the first month of life,* for a large proportion of those born with it die early, even if treated at once, or if they do survive are often weakly and unfit for the struggle of life. Syphilis is *the main cause of still-births* and also probably of a large number of *early inter-uterine deaths.*

The opinion of a leading American Obstetrician.—Dr. Whitridge Williams of Baltimore considers syphilis is responsible *for certainly 25 per cent.* of early deaths, and probably for many more.

References—

(*i*) Mr. D'Arcy Power's evidence, given before the Royal Commission on Venereal Disease. British Medical Journal, 1914, page 720.

(*ii*) Infant Mortality. By G. Newman, page 78 (Methuen & Co.).

(*iii*) Report on Infant Mortality, issued by the Commonwealth Committee on Death and Invalidity. (C. 3499, Government Printer, Melbourne.)

(*iv*) Seventy-eighth Annual Report of the Registrar-General (England and Wales), 1915.

Sir Bernard Mallet points out there is still no provision for the registration of still-births, although in view of the present danger to child-life, the vital importance of this information was emphasised in 1904 in the report of the Committee on Physical Deterioration.

(*12*) *Depopulation as a cause of the Declining Birth-rate.*

The *smallness of the Birth-rate* in France is a familiar topic to which the war has added a new and poignant interest, the chief cause of this being the limiting by the parents of their offspring to an agreed figure. The smallness of the family being a question of economy and foresight.

It is not only in France that relative depopulation has to be dealt with. In England widely divergent views are held as to the best way of dealing with this problem, *with which the increased cost* of living *is closely bound up.*

In Australia a Royal Commission decided that the higher classes were unwilling to undertake the burden of producing and rearing children.

References—

(*i*) Professor Charles Richet in Revue d'Hygiène, Mai 1917.

(*ii*) Lancet, 1917, Vol. I, p. 960.

APPENDIX III.

Ways in which Infant Mortality is being lowered and the conditions of child-birth improved.

sub-section.

(1) The work of various agencies.
(2) Report of Local Government Board, 1916-17.
(3) A Survey of the Statistics of Infant Mortality.
(4) Report of the Carnegie United Kingdom Trust on "the existing conditions for improving the welfare of mothers and children." 1917. Vols. I and II.
(5) "After-war Problems."
(6) National Baby Week.
(7) The Endowment of Motherhood.
(8) Improved conditions of the Housing of the Poor. Report on the Mortalities of Birth, Infancy and Childhood, issued by the Medical Research Committee.
(9) The actual figures of the Infant Mortality at Villiers-le-Duc (France).

The *physical development* of the infant depends mainly on—

(1) Environment.
(2) Food.
(3) Inheritance.

(1) Work of various agencies.

Most important work is being done by various agencies such as the Health Visitors, Infant consultations and others, for *improving the conditions of the poor* and *instructing them* in the right way of feeding and caring for infants. The *intelligent care* of the mother for her child is *most necessary* and important.

A point to be borne in mind by all social workers is *that the lower middle classes are often not touched* at all. At present the efforts seem to be concentrated on the very poor, *while the class above them* is often quite as much in need of help and teaching. Moreover any help given to the latter *stands* more chance of bearing good results.

The *importance of a baby* as a *potential citizen*, and *the responsibility of the community* to the baby as a citizen of the future must be recognised.

It is now agreed *that public money* is needed for the work, and the question comes forward "*who is to distribute the money?*"

All such work should obviously be *centred round the home*, and the visiting of the houses for all purposes of health and disease is at present carried on by the Sanitary Authorities.

For this reason it will most likely be found that the *sanitary authorities* should have the control of all money devoted to the alleviation of Infant Mortality and *act by means of the Medical Officers of Health* and the *Health Visitors, i.e.*, that Sanitary Authorities should *combine ante-natal* and *post-natal* work up to school age.

Sanitary authorities and their officers now devote a large proportion of their time and energy to the supremely important subject of Infant Mortality.

Much attention is paid to the subject by *Medical officers* of Health in their *Annual Reports*, who comment in these reports as to how their special town or district compares with other towns and districts, and how best they can diminish the infant mortality in their own district.

The *public conscience*, largely due to such efforts has been awakened, and it is significant that *there has followed a decline* of the infant mortality, so that now some towns

and a few cities have as small an infant mortality as, and in some *cases less* than, some rural areas. This is due to the fact that wide knowledge about infants and how best to feed and look after them is being spread to great advantage, while the rural areas being more isolated have less done for them, and in consequence there is more ignorance with regard to the welfare of babies.

(2) *Report of Local Government Board, 1916-17.*

The report of the Local Government Board for last year (1916-17) describes under the heading of "*maternity and child-welfare,*" *substantial* progress since the preceding year in the development of schemes for *safeguarding the health of expectant and nursing mothers, as well as that of their offspring.* It states that as the result of work already done provision for *home nursing* is known to be the *most effective element* in schemes of this kind.

By the end of last year the councils of nearly all the large towns and a large number of the extra-metropolitan county councils had made some provision for home visiting.

(*i*) *Health Visitors.*—The number of *health visitors* appointed by local authorities was :—

Year.	Number
1914	600
1915	812
End of February 1917	*1,445*

(*ii*) *District Nurses.*—In addition health visiting has been undertaken on behalf of county councils by about *800 district nurses.*

(*iii*) *Maternity and Child welfare Centres.*—The *maternity and child welfare centres* rapidly increased in number up to last Lady Day when they *number 842* (more than *half of these being voluntary* undertakings).

(*iv*) *Money Grants.*—During 1916 the Local Government Board made *grants* in respect of maternity and child welfare schemes of £68,000.

The report adds that the powers of English local authorities are as yet too restricted, hampering their work, and *suggests an increase in the powers* granted them.

When the proposed *Ministry of Health* becomes an established fact, then perhaps, such schemes may reach their fullest development.

(3) *A Survey of the Statistics of Infant Mortality.*

It is interesting to note that in a *critical survey of the statistics of Infant Mortality*, given as a lecture *to the Royal Statistical Society* (February 1917), by Dr. John Brownlee, Director of Statistics to the Medical Research Committee, he gives as his opinion that an *improved environment* is the most important measure for the maintenance of a healthy race, and that *no* effect can be too great to accomplish this improvement.

(4) *Report of the Carnegie United Kingdom Trust.*

In the report recently issued by the *Carnegie United Kingdom Trust on "the existing conditions for improving the physical welfare of mothers and children"* (Volume I), Dr. Hope, Medical Officer of Health for Liverpool, states that (—based on information supplied by the Sanitary Staff all over the country to whom appropriate schedules were supplied to be filled in—) *the lesson drawn from the results* of his enquiry is as follows :—"Besides—

(1) the need for more welfare centres and maternity homes, the latter especially in *rural* areas,

(2) is the importance of *improved education* in the various branches of the Science of Public Health, and

(3) of *encouraging research* into the circumstances adversely affecting infancy and motherhood."

The Position of the Midwife.—In Volume II, there is a careful "*Study of the Midwife*", by Dr. Janet M. Campbell, one of the senior medical officers of the Board of Education. She emphasises the *importance* of—

(1) attracting well-educated women to this profession, and
(2) after having provided them with a proper training, seeing
(3) that they are given an *adequate status* and *remuneration.*

(5) *After-war Problems.*

That this problem of improving the conditions of motherhood, and checking the wastage of child-life, is now recognised as being of the *utmost importance to the race,* is shown by the fact that in a book recently published "*After-war Problems,*" by the Earl of Cromer, Viscount Haldane, and others (London, George Allen and Unwin, 1917), two directly medical topics are handled in the section of Social Reform. Dr. James Kerr writing on *the National Health* finds the *chief national concern* should be healthy maternity and good nursing. All services and commodities, he concludes, necessary for public health, *should be completely controlled by the Community* in its own interests, and for the benefits of all its members.

(2) And Miss Margaret MacMillan's plea, in her paper on *the care of the child,* for *opening air nursery schools* is of interest in connection with *Mr Fisher's recent proposals.*

(6) *National Baby Week.* (*July 1st to 7th, 1917.*)

(*i*) Her Majesty the Queen opened a Child Welfare Exhibition where everything concerning the practical nurture and training of the child was exhibited.

(*ii*) There were a series of conferences with well-known authorities as speakers, on problems relating to the care of the mother and her child.

(*iii*) In elementary schools a prize essay scheme was started for girls, the subject being "How I mind our Baby."

(*iv*) The special attractions for provincial towns and villages included baby shows, perambulator parades, and exhibitions of various kinds relating to mother-craft.

(*v*) At a large meeting at the Guildhall, London, defining the policy of "Baby Week" a resolution was passed that

> "The citizens here assembled earnestly call for the co-operation everywhere of *municipal and voluntary enterprise* to secure the following objects, and pledge themselves to do their utmost in their respective localities for the furtherance of the same:—
>
> (*a*) A full time health visitor, under the control of the local medical officer of health, for every 400 babies in the area.
>
> (*b*) An approved infant-welfare centre within the reach of every working class home.
>
> (*c*) Ample facilities for the ante-natal care of mothers.
>
> (*d*) Medical supervision of children between 2 years and school age.

(7) *The Endowment of Motherhood.*

In *the United States* 27 out of the 48 States grant pensions to widows with young families to bring up—one State at least granting them to mothers irrespective of their civil state. In the States where the provision is in force the maintenance is granted in respect of all children under 14 years of age, ranging from 7½ to 10 dollars a month for each child. *An advocate of the scheme* points out that whereas it costs 100 dollars a year to support an orphan by the pensions system, it has cost the State an average of 300 dollars a year to support a child in an institution.

The war is familiarising the whole civilised world with *the idea of endowing motherhood* in one form or another, *and more is likely to be heard of it.*

(8) Improved conditions of Housing of the Poor.

Much is being done towards ameliorating conditions in the *congested areas* of large towns.

(*i*) Model lodging houses.
(*ii*) Workmen's suburbs, outside the town, with lower rents and more healthy dwellings, within reasonable tram car or train ride of their work. (In Scotland these experiments have shown promising results.)
(*iii*) Garden cities.

The housing problem has been very successfully solved in places like Port Sunlight and Bourneville.

When the public realise the greater economy of saving lives and preventing disease, the *economic obstacles* to improving the housing of the poor should disappear, and *then only* will the environment of the poor child—in its widest sense—be levelled up towards that of the well-to-do infant.

The *increasing importance* attached to better housing and a purer atmosphere and healthier environment is shown by the conclusions arrived at in the Report recently issued by the Medical Research Committee :—

Special report on the Mortalities of Birth, Infancy and Childhood ; issued by the Medical Research Committee, October, 1917. (H. M. Stationery Office. Medical Research Committee. Special Report Series. No. 10. Price 1s. 6d.)

This contains three studies of the mortality in early life.

(*i*) *Relative Importance of Pre-Natal and Post-Natal conditions.*—Dr. Brend in a comparison of the rates of mortality in infancy and childhood, obtaining in different types of community *concludes* that the "excess (of mortality) is due to some factor or factors in industrial towns, the centres of large cities, and mining areas, of which possibly *the most important* is a polluted state of the atmosphere.

(*ii*) *Causes of Infant Mortality.*—Dr. Leonard Findlay attaches much importance to *housing conditions* and remarks that "it hardly seems likely that any number of visits to infant clinics will ameliorate the health of the infant, so *long as it has to spend* its time in unhygienic surroundings. This is well exemplified in hospital practice. Not infrequently children are admitted to hospital suffering from marasmus, enterites, or broncho pneumonia, and recuperate, and are given back to the parents almost normal children, *only to return* with a relapse in a matter of a month or even less."

(*iii*) *Changes in the Physiological Processes of the Developing Child.*—The third paper is by Dr. Brownlee, the Director of the Medical Research Committee's Statistical Department. The results of his *statistical analysis* causes him to support a plea for the *more systematic study* of the changing physiological conditions of the infant and child. His reasoning leads one to expect that *exposure to a bad environment* should not operate uniformly at different ages. From a comparison of Salford's death-rates at ages with those of other towns, and of the Healthy Districts Life Table, it seems that it is at *the age of two years* that children are most affected by an unhealthy environment. "Death rates," Dr. Brownlee remarks, "must therefore be *considered in relation* to the physiology of development, and not as independent numbers which can be used for comparison, without giving consideration to the physiological stability of the growing child."

These three studies are preceded by a general introduction written by *Dr. A. K. Chalmers in the name of the Medical Research Committee,* pointing out :—

What may still be done in war time to decrease the Infant Mortality Rate.—" In the meantime it would be altogether erroneous to suppose that the plain need for further research and the present partial delay in its prosecution, *give any ground for postponing practical measures* for diminishing the avoidable death-rate. We have no need of further inquiry to show that—

(1) improvements in an admittedly imperfect *midwifery service* would certainly diminish blindness and death among babies, or that

(2) *bad housing conditions* are a causal condition of much disease in infants, or again

(3) that a *purer milk supply* in cities and districts where it is known to contain habitually the germs of Tuberculosis, would lessen or abolish an important group of the diseases of children."

(*9*) *The Infant Mortality at Villiers-le-Duc* (*France*).

In view of the many references by social reformers in recent literatures to the scheme *enforced by the Municipality at Villiers-le-Duc,* who claim it has abolished the death-rate of infants it is worth noting *the extreme smallness of data* on which these claims were made (as for example in a recent Milroy lecture).

The actual figures (*not merely the death-rate*) of the experience of Villiers-le-Duc so widely boomed by social reformers are as follows :—

Years.	Total Births.	Deaths.	Infant Mortality Rate.
1892—1903	54	...	...
1906—1915	43	4	93

An *examination* of these figures, taking the two periods together shows a rate of 41 deaths per 1,000 births, which is *about equal* to the average of much of the West of Ireland, and of many healthy rural English districts.

[This might be taken *as a warning against* judging any result of social (or, other) workers on too small data !]

APPENDIX IV.

The conditions of Health and other similar workers for improving the conditions of Child-birth.

Sub-section.

(1) Duties of health visitors.
(2) Voluntary workers.
(3) Infant consultations and schools for mothers.
(4) Ante-natal hygiene.
(5) Qualifications of a health visitor.
(6) Specimens of pamphlets distributed by health visitors—
  (*a*) Directions for the management of infants—
    (*i*) Breast fed.
    (*ii*) Artificially fed.
  (*b*) Precautions against summer diarrhœa.
  (*c*) Precautions against Measles.
(7) "Slip of paper" about Baby's Feeding given to the mothers at the Manchester Children's Hospital.
(8) A syllabus of a Course of Mothercraft.

(*1*) *Duties of Health Visitors.*

Starting *from the time of pregnancy* it is the duty of the Health Visitors to advise the expectant mother, as to her health, and to get her to realise the importance of this to the baby to come.

Help and advice in *everything* relating to the baby, including its clothes, cot and cleanliness—to give advice as to the feeding of the child, and to try to get for it breast feeding—all this should be done by the Health Visitor.

A trained and experienced Health Visitor *should be capable* of advising on ordinary changes of feeding, except in cases of illness or extreme delicacy. She should also be capable of advising the use of simple remedies such as the giving of olive-oil, and cod-liver emulsion.

Health Visitors, however, *should always have some skilled physician* to whom they can refer all the difficult cases, for the artificial feeding of infants is, in many instances, no easy matter, and needs the experience of a doctor who has paid special attention to the subject.

The Health Visitor can be of great value *in seeing that the doctor's orders are carried out*, and there is much to be gained from—

(1) *doctors*,
(2) *infant consultations*, and
(3) *Health Visitors* all working in unison.

(*2*) *Voluntary Workers.*

General experience shows that qualified and competent voluntary Health Visitors may help a good deal *if under supervision*, but voluntary Health Visitors *cannot take the place* of trained ones. Edinburgh has at least 170 such supervised workers, while there are many also in towns such as Birmingham, Halifax, Leicester, Huddersfield, etc.—*all working under a Superintendent attached to the Health Department of the town.*

The work done by the Voluntary Visitors in Glasgow under the Cowcaddens Infant Health Association is very good.

In Huddersfield there are also a large number of voluntary Health Visitors doing useful work *under the supervision of the woman Assistant Medical Officer of Health.* In case of need they send for her, and she at once takes charge of all difficult cases. *Thus there is a voluntary effort in a setting of municipal activity.*

All the efforts are apt to prove a *failure,* however—

(1) *if the work is not systemised* in some way, or

(2) if the workers are *untrained.*

(3) *Infant Consultations and Schools for Mothers.*

An Infant Consultation *to be efficient should include*—

(1) the giving of classes to the mothers together with

(2) cheap, nourishing dinners, as well as

(3) the periodic weighing of the infants,

(4) with advice, when necessary, from the medical practitioner, associated with the consultation centre.

The idea of starting these centres came originally from Belgium, the first to be organised in England being the St. Pancras School in 1907.

There are now many such centres in the midst of large towns, *within easy reach of poor and working mothers.* They are often run by—

(1) *voluntary workers,* with the assistance of a

(2) *paid superintendent,* and the help and advice of a

(3) *visiting doctor* who usually gives her services free.

Information on the following subjects—

(*i*) Provision of milk for young children. (Depôts have been started with varying success for the supplying of pure milk at cost price, or under, to poor and working mothers),

(*ii*) Baby Shows and Competitions,

(*iii*) Hospitals for infants and children,

(*iv*) Day Nurseries,

(*v*) Crèches,

may be obtained from—

(1) the *National Society* for Physical Education and Improvement, 4, Tavistock Square, London, W. C.

(2) *National Health Society,* 50, Berner's Street, Oxford Street, London, W. C.

(4) *Ante-natal Hygiene.*

In various countries there has been a determined effort to *improve Ante-natal Hygiene* —especially in *New York* by Dr. Philip Van Ingen where (1) *trained nurses work under* a (2) *physician* and a (3) *supervising nurse.* Their *duty is* (1) to get into touch with expectant mothers in their districts and (2) to help and instruct them in anti-natal hygiene, and (3) keep in touch with them throughout the pregnancy.

In Glasgow and in Bradford very successful ante-natal departments are run *in connection* with (but separate from) *large Maternity Hospitals.* The eagerness with which working-class mothers have come forward to attend these cliniques and the good results obtained in the short time since the work has been started, promise well for the future, and *point to a way in which maternity work in other towns* may be usefully developed.

(5) *Qualifications of a Health Visitor.*

According to *the regulations made* by the *Local Government Board* under the London County Council (General Powers) Act, 1908, the *following alternative qualifications* are

required of Health Visitors appointed to London posts. These may serve as a guide for appointments made in other parts of the country.

The regulations state that a woman shall be qualified to be appointed Health Visitor :—

(*a*) if she is a duly qualified medical practitioner within the meaning of the Medical Acts,

(*b*) or if she is qualified for the appointment of nurse by having undergone, for three years at least, a course of instruction in the medical and surgical wards of any hospital or infirmary, being a training school for nurses, and having a resident physician or house surgeon,

(*c*) or if she is certified under the Midwives Act, 1902,

(*d*) or if she has, for a period of not less than six months, undergone, in a hospital or infirmary receiving children as well as adults and having a resident physician or house surgeon, a course of instruction including subjects relating to personal hygiene, and holds the certificate of the Royal Sanitary Institute for Health Visitors and School Nurses, or the certificate or diploma of the National Health Society, or of any other body which may from time to time be approved by the Board,

(*e*) or if she has, in the service of a sanitary authority, or of the council of a borough or of another urban district or of any other public body or authority in England or Wales, discharged duties *which are similar* to those described in the Act or prescribed by these regulations in relation to the office of Health Visitor, and produces such evidence as, in the Board's opinion, suffices to prove her competency.

(*6*) *Specimens of Pamphlets distributed by Health Visitors :—*

COUNTY BOROUGH OF SALFORD.

Directions for the Management of Infants (breast fed).

Washing and Clothing.

Babies should be washed all over daily with warm water.

They should be lightly and warmly clad especially during the night.

Clothing should be woollen or flannel. Stockings should come well up the legs, the dress have long sleeves and fit well into the neck. Flannelette should not be used unless guaranteed to be unburnable.

Air and Exercise.

Fresh air is constantly needed. Take them out whenever the weather is fine. Open the windows at least twice a day.

Sleep.

Babies require plenty of sleep. Up to three years old a morning and afternoon sleep at fixed hours is necessary. Accustom them to going to bed while yet awake, and avoid nursing them to sleep in the arms. If possible the child should sleep in a cot by itself.

On no account give Soothing Syrups or Teething Powders.

Suckling.

The mother's milk is the natural food of infants up to seven months. If the mother has plenty of breast milk no other food should be given. Up to six weeks old the child should be suckled every two hours during the day, and every four hours during the night.

From six weeks to three months old every 2½ hours during the day, once during the night. From three months to six months old, every three hours during the day.

From six to seven months old, every 3½ hours during the day, then gradually begin to wean, ending by the ninth month.

On no account keep the baby at the breast after it is twelve months old; to do so weakens the mother and child.

Mothers are warned against taking malt liquors in order to increase the amount of breast milk.

Do not use a dummy teat.

Weaning.

When the child has reached the age of seven months it should have five meals a day, three of which should be of milk thickened with biscuits, oatmeal or well-boiled bread. The two other meals should consist of twelve tablespoonfuls of milk only. From nine months the yolk of an egg or a little beef-tea may be added to the diet.

It is not advisable to wean the infant during the months of July, August, and September, as the change of food during these months may bring on diarrhœa.

Young babies should not have cornflour, bread, arrowroot, sago, rusks, or any starchy food, and it is a great mistake to give children under two years old "just what you have yourselves."

Do not think that when a child cries it is hungry; it is sometimes owing to over-feeding.

Mothers should take great care to keep the breasts and nipples clean; also the baby's mouth should be regularly sponged out with clean warm water after each meal. These two precautions are a great preventative of thrush.

(Signed) C. H. TATTERSALL,
Medical Officer of Health.

Town Hall, Salford

COUNTY BOROUGH OF SALFORD.

DIRECTIONS FOR THE MANAGEMENT OF INFANTS (ARTIFICIALLY FED).

(The first three items *Washing and Clothing, Air and Exercise, Sleep,* are the same as given in the pamphlet for Breast-fed Children.)

Feeding.

If the child is artificially fed great care should be taken in the preparation of its food. The best artificial food is cow's milk and water sweetened with a little sugar, in the following proportions:—

Up to six weeks old: two parts of water, one part milk. Amount: four tablespoonfuls of the mixture every two hours during the day, every four hours during the night.

From six weeks to three months old: one part water, one part milk. Amount: eight tablespoonfuls of the mixture every 2½ hours during the day, once during the night. From three months to seven months old: two parts milk, one part water. Amount: eight tablespoonfuls of the mixture every three hours during the day.

When the child has reached the age of seven months it should have five meals a day, three of which should be of milk thickened with biscuits, oatmeal, or well-boiled bread. The two other meals should consist of twelve tablespoonfuls of milk only. From nine months the yolk of an egg or a little beef-tea may be added to the diet.

The milk should be boiled and kept in a clean jug covered over, and only a small quantity should be got ready at a time. It should always be warmed before giving it to the child, by standing the bottle in a bowl of hot water.

Never give a child sour milk—sourness is detected sooner by smell than taste.

Do not think when a child cries it is hungry; it is sometimes owing to over-feeding.

Condensed milks, especially skimmed milk brands, and foods which need no fresh milk should *not* be given to infants, as these have been proved to give rise to rickets and infantile scurvy.

The Bottle.

The bottle should be boat-shaped with an India-rubber teat fitting over the mouth of the bottle. This can be easily turned inside out and properly cleaned. India-rubber tubes should be avoided. After each meal the bottle and teat must be thoroughly rinsed out, and it will be safer to put the bottle in a pan of cold water, and put on the fire to boil, so as to thoroughly sterilise the bottle.

Young babies should not have cornflour, bread, arrowroot, sago, rusks, or any starchy food, and it is a great mistake to give children under two years old "just what you have yourselves."

Do not use a dummy teat.

If the baby's mouth is regularly sponged out with clean warm water, it is a great preventative of thrush.

(Signed) C. H. TATTERSALL,
Medical Officer of Health.

Town Hall, Salford.

COUNTY BOROUGH OF SALFORD.

Precautions against Summer Diarrhœa.

1. This disease is largely caused by the contamination of food by flies. Every care should be taken to prevent this by protecting food, destroying flies, and keeping the premises clear from any accumulation of filth.

2. Children under 12 months of age, and especially those fed by hand, suffer most from this disease. If not breast-fed children under this age should be fed on milk, and nothing else.

3. All milk should be boiled before use, and then kept in a clean vessel covered over with a clean damp cloth.

4. All tainted meat and fish, unripe and overripe fruit should be rejected, and all food should be kept in a clean, well-aired place.

5. Overcrowding is a cause of diarrhœa. All bedroom windows and the fire-place should be left open day and night during warm weather. Closets, yards, and unpapered rooms should be limewashed.

6. Dirt and filth are important causes of diarrhœa. Floors should be frequently scrubbed, dust removed from rooms, and filth from back yards.

7. All accumulations of filth, or offensive smells, should be at once reported to the Health Department, Town Hall, Salford.

(Signed) C. H TATTERSALL,
Medical Officer of Health.

HEALTH DEPARTMENT, TOWN HALL, SALFORD.

Precautions against Measles.

Measles is a very fatal disease.

Children suffering from measles should, where possible, be isolated upstairs, in a room ventilated by a partially opened window, and with a good fire in the room.

No child should be admitted into a house where measles is present, nor should a child suffering from this disease be allowed to sleep, play with, or in any way come in contact with other children.

Children suffering from measles must not be allowed to attend school for a period of four weeks from the commencement of disease.

No child in a house where measles is present ought to attend the Infants' Department of any school.

It would be well that the clothes of the children should be disinfected before they return to school. This will, to some extent, be done by exposing them freely to the air outside for several days; but on application at the Health Department, Town Hall, clothing will be removed and thoroughly disinfected.

Disinfectants will be supplied upon application at the Health Department, Town Hall.

(Signed) C. H. TATTERSALL,
Medical Officer of Health.

(7) *Slip of paper about Baby's Feeding given to the Mother at the Manchester Children's Hospital.*

To help the mother remember instructions:—

Please give your Baby in a clean bottle

Cow's milk } .....parts every.....hours.
Water }

Give.....tablespoons at each feed.

To each feed add.....of sugar.

THE WIMBLEDON MOTHERS' AND BABIES' WELFARE SOCIETY.

A SPECIMEN OF HOW CLASSES IN MOTHERCRAFT ARE CONDUCTED. (A PRACTICAL DEMONSTRATION ACCOMPANIES EACH LECTURE.)

(8) *Syllabus of a Course of Mothercraft.*

I. The mother's health during pregnancy and nursing. Clothing. Exercise, rest. Feeding. Special warning against stout and gin.

Demonstration.—Lentil soup or other cheap, nourishing dish.

II. Managements of infants during—

(*a*) Breast-feeding.
(*b*) Weaning.

Demonstration—Oatmeal jelly or barley water.

III. Artificial feeding (*i*)—

Danger of starch foods:—

Sweetened condensed milk.
Skimmed condensed milk.

Demonstration.—Sample tins of good and bad brands of milk. Suitable and unsuitable feeding-bottles.

IV. Artificial feeding (*ii*)—

Care of milk: sterilisation.
Care and cleaning of bottle.

Demonstration.—Care and cleaning of bottle.

V. Cleanliness—

Bath: coldsponge.
Care of navel, feet, hair, skin, etc.

Demonstration.—Boiled starch for sore skin.

VI. Clothing for infants and children—

Warmth without weight.
Freedom for movement.
Danger of flannelette.

Demonstration.—Model garments; "non-flans" flannelette.

VII. Teething and care of the teeth. Care of the eyes.

Demonstration.—Eye-bathing. Boracic lotion.

VIII. Feeding of children from one to five years:—

Regular meals at the table.
Mastication of food.
Dangers of "drinking with the mouth full."

Demonstration.—Baked flour. Porridge or light pudding.

IX. Ailments (i)—

Summer diarrhœa: causes, description, prevention, cure, castor oil.

Demonstration.—Albumen water, arrowroot.

X. Ailments (ii)—

Thrush—

Colic: dill water.
Constipation: olive oil and magnesia.
Bronchitis and common cold: ipecacuanha and glycerine.
Croup.

Demonstration.—Poultices and fomentations. Improvised bronchitis kettle

XI. Infectious diseases: signs of symptoms. Measles, scarlet fever, diptheria, whooping cough.

Demonstration.—Bed-making. Tent for steam-kettle.

XII. Training of habits and character of children: use of comforter, separate cot, regularity of feeding.

Demonstration.—Banana crate or other simple cot.

XIII. *Care of the house.*—Cleanliness, danger of flies, care of dust bins, closets, sinks and cisterns, fire-guards.

Demonstration.—Covers for milk-jugs, home-made safe.

XIV. *Ventilation.*—Importance of sunshine, fresh air, and exercise. Let the baby sleep outside.

Demonstration.—Method of ventilation. Towel-horse screen against draughts.

XV. *The Mother.*—Importance of a mother's health to a whole house. Clothing. Care of the teeth. Rest; get the children to bed early. Avoid stout and gin. The mother as cook and manager.

Demonstration.—Simple recipes for cheap feeding.

Other *good plans for lectures* are given in—

(1) "Schemes of Instruction in First Aid, Home Nursing, Health and Infant Care." Published by the London County Council for its evening schools. P. S. King & Sons, 2, Great Smith Street, Westminster, S. W. Price 3*d.*, post free.

(2) "Syllabus of Seven Simple Lectures on the Care of Infants and Mothers." C. M. Symonds, Scientific Press Ltd., 28, Southampton Street, Strand, W. C. Price 7½*d.*, post free.

APPENDIX V.

The Causes of the unfavourable conditions of Child-birth in India.

Sub-section.

I. (*a*) The Dai: *unskilled midwifery.*
(*b*) The Training of Dais.
II. *Child Marriage.*
III. *Poverty and Bad Housing.*
IV. *Ignorance* and *Disease* among Indian women and children.

I (a). The Dai.

The dai or untrained native midwife *inherits* her office and her skill (or lack of it!) usually from a relation who has been a dai before her. In this way tradition is handed on, and mediæval practices survive in the inner recesses of Indian homes, even in the houses of the well-to-do, where outwardly such evidences of western progress are present as electric light, the telephone, and the all-invading gramophone.

The work of a *midwife* being *considered unclean*, the dai is naturally a member of the lowest classes.

In the sacred city of Benares, I found the low Hindu sweeper-class were divided yet again into seven castes, and dais belonging to the upper of these castes had attendant "*cord-cutters*" (women whose duty it was to cut the umbilical cord)—as this was considered the most unclean part of a labour case these latter women came from the very lowest of the seven castes.

I think to properly understand the dai, one must endeavour to look at things *from her point of view*; though when one is faced with the dreadful results of her handiwork—it is difficult sometimes to appreciate this fact.

The dai is out to earn her living—and *usually* she is *badly paid*. She may be given as a fee anything from *4 annas* in poor neighbourhoods to Rs. 15 in the houses of the rich. This includes attendance at the time of confinement and usually for a definite number of days (usually ten) afterwards, at the end of which period among many castes it is customary for the puerperal woman to have her ceremonial bath, and the dai is expected *to cowdung* and *clean the* "*defiled*" apartment, where the confinement has taken place. She also washes the dirty linen of patient and baby.

The dai is rarely an appetising figure when seen at her work, her *clothes are filthy rags and her body unwashed.* Even when a dai comes up prepared for inspection by a medical woman, in *outwardly* clean apparel, a request that she would loosen her outer garments, usually reveals her everyday dirty clothes underneath.

The dai being usually *paid according to results*, is expected to "do something" for the patient. In this way one often sees normal labour cases, which would have apparently proceeded uneventfully, but where the dai has interfered too early, with usually disastrous results. For instance, the dai may have been summoned only for false pains—but she is expected to do something to earn her fee. She may sit all night kneading the patient's abdomen—in the morning nothing has happened—the relatives are very anxious—the dai to save her reputation does something quite unnecessary, such as rupturing the membranes when the mouth of the uterus is only a little dilated, and it is only later, when, with delayed labour the patient is utterly exhausted that she is brought to us in hospital. with the child perhaps, forced into a malposition.

Knowing nothing of the dangers of dirt and sepsis, *the dai never has the slightest hesitations in putting her unclean hand into the uterus.* Whether she be summoned to assist at a confinement, or to diagnose a gynaecological condition, *a vaginal examination is expected* from the dai—she has to earn her fee—so in goes her dirty hand, which perhaps has just been cow-dunging a floor or attending a case of puerperal fever—and the Maternity and Gynæcological Wards and Dispensaries of any women's hospitals, show striking proof of the result!

In a village near Hyderabad, Sind, a dai announced that she had just had *14* cases, *12* of which had died of puerperal fever. Astonished at the dismay with which a medical woman heard this report, she added "It was their time to die, how could anybody have saved them."

This same dai was washing the linen of normal and infected cases at the same village tap.

Natural Immunity.—It is not only the danger of—

(1) an imminent acute puerperal septicæmia that follows a dai's "treatment," but

(2) owing perhaps to their relatively *higher immunity*—(the rapidity with which cases of puerperal sepsis clear up in the lower classes in India;—such as the sweeper caste—who are naturally exposed to much infection, once given a favourable surrounding, opens an interesting but appaling prospect of what the Race must have gone through, before the protective defences on the part of the body could have reached such a fine point)—*many of the patients survive at the time* but develop *a severe pelvic cellulitis* which is often a cause of *sterility* and of *painful adhesions*, for the rest of the patient's life.

The *surroundings* in which the dai has to conduct her case are always *unfavourable*, among the poorest classes a mud hovel, among the more wealthy the darkest and most airless room in the house. I have been in a rich house, in a dark cellar-like small room in which the only lighting was obtained, even in the day time, from the tiny cotton wick of a primitive vessel containing oil. Here lay the young mother for 10 days unwashed, in the same garments which she had worn at the time of her confinement. (For the native mind is economical and since garments worn during the puerperium are among many castes considered to be defiled, and have to be thrown away, it is often a *difficult* matter to obtain clean clothes for a puerperal woman.)

The ingenuity with which any possible inlet or outlet for fresh air is stopped up in a lying-in room—is worthy of a better cause! Fresh air is considered most unwholesome for both mother and infant.

The dai traditions though interesting from any point of view are most difficult to combat—they vary in different parts of the country, but the following are fairly constantly present. It is considered unwise to give *any nourishment to a woman in labour*, and so one finds women dying almost of exhaustion in cases where labour is long delayed. (This certainly results in the somewhat remote advantage that one can usually give an anæsthetic when necessary, without anxious enquiries as to previous meals.)

If the *labour is long delayed* the following efforts are made by the dai to assist the passage of the child. An egg may be beaten up and smeared over the vaginal walls to lubricate the passage, or *plugs of "medicine"* placed in the vagina.

The composition of these plugs (which I also find used in Gynæcological cases) may be of earth alone (hence the cases of *tetanus* in puerperal women), or more often of a mixture of substances, cloves, ghee, marigold, and earth. Should the mouth of the uterus be sufficiently dilated, the plugs are introduced also *into the uterus* itself.

In cases of delayed labour *seeds* such as date seeds are placed in the mouth of the uterus to dilate it, the idea being that the seeds will absorb moisture, and with their consequent swelling, the passage will be forced open.

The dai seems quite unable to recognise any limitations to her art! One often sees in cases of contracted pelvis due to osteomalacia, if there seems no chance of the head passing down, she attempts to draw on the limbs, and if possible breaks them off. If possible she prefers to extract the child *by main force*, and the patient in such cases is badly torn, often into her bladder, with the resulting *large vesico-vaginal fistulæ* so common in Indian women, and which causes them so much misery.

The dai is *jealous of her reputation* and even if a Doctor-Miss-Sahib is within reach delays summoning her aid till labour has proceeded for 2 or 3 days and the patient is *in extremis*.

After the birth, the child is usually given for the first three days a substance called *gutli* which consists of a mixture of spices, with in addition something of the nature of lucky coin or charm (usually old and dirty), or some incantations written on paper, cooked with them.

It is considered *bad both* for mother and child if the baby is put to the breast before the third day—consequently involution of the uterus and the flow of milk in these cases are retarded.

Many castes will not give puerperal women *milk to drink*, nor are they inclined to wash either baby or mother until the day for the ceremonial bath arrives. In many places fever is expected by patients as a natural event in the puerperium—when one considers the dai's methods, this is scarcely to be wondered at!

Various implements are used by dais to cut the *umbilical cord*. For example, I have noted a rusty nail, an unspeakably dirty and blunt household knife, also a piece of a kerosine oil tin which had just before been used to peel vegetables

The treatment of the umbilical cord is always unsatisfactory. At the best it is left undressed till it falls off—the less fortunate infants are treated by the application of various substances, of which earth is a common constituent, with the result that *septic cords* are often seen and the incidence of *tetanus* in infants is alarmingly high.

The dai, by virtue of her calling, undertakes the diagnosis and *treatment* of various *gynæcological conditions*. For leucorrhœa and for *sterility* she usually places filthy plugs in the vagina—and a *pelvic cellulitis* of more or less severity is *the usual result*.

In the Sind deserts the practice of "Sund" or the so-called *female circumcision* is practice as a cure for sterility. Here the dai cuts round the anterior part of the vaginal orifice with some sharp instrument. Her fee for this operation is, I understand (if she can get it), about Rs. 5.

Even if a dai attends a hospital and learns the rudiments of midwifery, *the forces against her applying them are very great*. Usually a *mother-in-law*, or some ancient dame superintends the confinement, who herself is used to the old traditions and *insists on their observance*.

While in country places, and among the poorer classes both sexes are equally ignorant and bound to tradition, in the more educated classes, especially in towns, I often find the men of a family *less* narrow-minded, and willing for more rational methods, but it has been the immemorial custom that the management of a confinement is the province of the leading woman of the house, and the men are powerless to interfere.

Even where a woman doctor is supposed to be in charge of a case, it is not unusual to find a *dai* is *also being* consulted, and in the intervals of the doctor's visits, applying her own methods of treatment, the evil effects of which are usually later attributed to the western methods of the unfortunate medical woman!

The dai, therefore, is an important factor and one which cannot be overlooked in any scheme for improving the conditions of child-birth in India. In the future we may hope to see midwifery in the hands of trained nurses, (and every effort should be made *to increase* the number of such women), *but till the patient herself ceases to desire* and employ a dai

it is necessary to acknowledge the existence of the dai class, and *to limit their power of doing harm* by—

(1) attempting to lessen their ignorance, and
(2) improving the conditions of their work.

As to the other side of this depressing picture I can think of nothing more *encouraging* than a visit to the *two lady health visitors of Delhi* and to see their dai class.

Their work seems *to be a model on which* that in many Indian *towns might be modelled* (though the *tact* and *patience* that have brought forth such results are, alas ! not to be found on every hand). They are *creating a demand* among the dais of Delhi for instruction in midwifery ;—dais who have come to their classes and have learnt elementary lessons of cleanliness are able to conduct their cases better, and with freedom from puerperal fever. They are naturally therefore, *in more demand*, and get more work than those whose patients get such complications.

In this way the more ignorant dais are thrown on their defensive, and come for instruction also.

It is urged by these workers, and by others interested in the " dai question," and I, myself have been struck with the necessity of *constant supervision of the dai's afterwork*. " A little knowledge is a dangerous thing "—I have seen dais with a rudiment of hospital training giving large doses of Ergot early in labour, with consequent tetanic uterine contractions and exhaustions of the patient.

One advanced dai, having watched a repair of the perineum, at hospital, attempted the same operation on her own, at a case. But she stitched with a dirty needle and thread, without any attempt at sterilisation and unfortunately, the patient developed an acute septicæmia ! !

When one considers the influences against which they have to contend, it becomes evident, that for the adequate supervision of the dai class, *organised schemes*, together with the *co-operation of the public and of municipal authorities* are necessary. I have added an outline of some schemes in different towns, which are giving promising results.

I (b) The Training of Dais.

There are *two systems* of training dais. The first by having a *trained midwife* attached to a hospital, going out to cases for which she may take fees. *The other*, which should always go on side by side with this is to train the indigenous dai. In this case a trained nurse or Sub-Assistant Surgeon is necessary (a nurse often gives more satisfactory results as she is less tempted to take private practice). The *indigenous dais* should report their cases to her, getting Re. 1 notifying fee if they do it in time for her to be present at the labour, and 8 annas if after the labour, when the nurse will visit the case within 3 or 4 days. The nurse should encourage dais to come to classes of instruction (such classes can be made very attractive if augmented by a magic lantern for demonstrative purposes).

In all places where there has been success as regards indigenous dais it has been recognised that teaching is *no use without supervision*, and that progress with dais must be slow. Tact and gentleness are more needed than anything else.

The actual method of dai instruction will need to be modified by the requirements of the particular city or town, for which it is intended.

Bombay, Calcutta and *Madras* specialise chiefly in training and putting in trained dais.

In Bombay indigenous dais are also trained together with their daughters and daughters-in-law, simple lectures being given to them in the vernacular on elementary hygiene, how to attend normal cases of labour, the need of aseptic precautions, etc.

In Delhi two lady health visitors supervise the city dais' work.

They have a class for dais where they teach :—

Cleanliness.
Simple anatomy.
The ordinary mechanisms of labour—how to diagnose a normal case and how to manage it (with a dummy and doll the positions are exactly shewn).
How a normal case may become a face preservation.
How to manage a Breech Presentation.
What to do for hæmorrhage.
When to send for a doctor.
The importance of the need of early diagnosis of abnormal cases.
(A "magic lantern" with slides, is used for teaching.)

All this is done in class but Miss Graham and Miss Griffin insist that this teaching is of no use without giving the dais practical instruction at their own cases. The conditions in a patient's house are very different from those in a hospital, and they teach the dais to make use of what they find at hand. *Their experience* is that dais need constant supervision, that the very best of dais soon revert to old methods, for the people do not like new ways and the dais have many difficulties to contend with. They are often not allowed to be clean in their work, owing to prejudice on the part of the patient or her friends.

Miss Graham and Miss Griffin very kindly took me with them to see their work at Delhi, and I noticed, in the Indian homes, that when the lady health visitors were present, they could very often by their tact and knowledge overcome prejudices, by explaining the reasons for cleanliness, etc., the people often attending to them when they would take no notice of what the dai said.

Assisted by the Victoria Memorial Scholarships Fund.—Dr. Henderson in *Nagpur, Central Provinces,* conducts a class for indigenous dais, and also gives them help and advice with their cases as need arises. The dais come to report twice a week, and are paid 4 annas for each case, and are fined 2 annas for any death either of mother or child occurring within 8 days after delivery.

They get 8 annas if they call in the doctor for a difficult case, and Re. 1 if they bring a case to hospital.

Hospital midwives inspect all cases within 8 days.

There is a school also for the dais' children who are paid (a few pice) for attendance.

Dr. Stuart herself conducts a dai's training class in *Quetta* and supervises their work. An account of her work and rules are attached.

Dr. Lamb at *Amritsar,* works on much the same plan as Dr. Stuart but considers Re. 1 a case higher pay than is necessary for a trained dai, as they get in addition their payments from the patients.

In *Bhopal* dais' training classes are held. No fees are given as the dais attend by the Begum's orders.

In *Ferozepur* Dr. Allen and her matron Mrs. Martyn worked on much the same lines as Dr. Stuart in Quetta, themselves personally visiting all labour cases. They found that after the first the people welcomed their visiting.

In *Jubbulpore* a trained nurse, working under Dr. Batho's supervision, visits every labour case 3 times during the first 20 days after labour—unless the people object, but this they seldom do. In this case the municipal chuprassi brings the nurse the names of the puerperal women so that nothing is paid, except her salary and carriage allowance.

In *Agra* a Female Sub-Assistant Surgeon works (under the supervision of the senior medical woman in charge of the Dufferin Hospital). She conducts a dai's training class, and gives rewards for regular attendance, after visiting the dais' cases, for good work.

Accouchement Outfits for Indian Women.—It is usually impossible for a trained nurse or trained dai, to obtain the *necessary outfit* for a patient's confinement, owing to the prohibitive cost of materials.

Anything provided by the patient herself will certainly *not be sterile*, and in the majority of cases will consist only of *old and dirty rags*.

The idea of providing suitable outfits at reasonable prices (cost price) suggested by the Victoria Memorial Scholarships Fund, will be welcomed all over India, and if a *depôt* for the sale of such outfits could be started in each *town* (it might be run by the Health Officer and by the local Women's Hospital together), and in connection with every Women's Dispensary in *rural districts*, there would, I think, be a ready response from all classes of women.

II. Child Marriage.

State of feeling in India regarding marriage.—For *Hindus* marriage is a sacrament, which must be performed *regardless* of the fitness of the parties to bear parental responsibilities.

A *male* Hindu must have a son to perform his funeral rites, lest his spirit wander uneasily in the waste places of the earth. A *Hindu girl* unmarried at puberty is a source of social obloquy to her family and of disgrace to her ancestors. Among *Mahomedans*, who are not handicapped by such penalties, the married state is equally common, partly owing (1) to Hindu example, and partly (2) to the general conditions of life in primitive society, where a wife is almost a necessity for house-work and as a help-mate in field work.

An exception is Burma where caste restrictions are unknown and the general conditions of life more nearly resemble those of European countries.

In the total population 315 millions, in India, of the 49 per cent. of the *total male* population that is unmarried, $\frac{3}{4}$ *is under 15 years* of age, while an equal proportion of the total female unmarried population is under the age of *10 years*.

At the reproductive age-period (15-40), the proportion is *6 per cent. for the unmarried female* population.

While *under 5 years of age* in the *Hindu* female population, *18* girls per mille are married, for *Mahomedans* there are only *5*, and between the *ages of 5 and 10* years, the figures are, respectively—

Hindus 132 married girls per 1,000 girls. *Mahomedans* 65.

But at the reproductive age period 15-40, owing—

(1) to the greater mortality consequent on child marriage, and

(2) the depletion of numbers through the prohibition of widow re-marriage, the Hindu superiority in numbers is gone and the Mahomedans *have a larger proportion* of married females at this age, *viz.* :—

Hindu 837 married women per mille.
Mahomedans 860 married women per mille.

Hence the relatively greater prolificness of the Mahomedan, as compared with the Hindu population.

In the *Buddhist population* which is practically confined to *Burma*, the proportion of unmarried persons is highest, and of married lowest, the figures more closely resembling European countries :—

Up to 15 years of age there are 26 *Hindu* widows per 10,000 of female population.

Up to 15 years of age there are 16 *Mahomedan* widows per 10,000 of female population.

Up to 15 years of age there are *0* (*nil*) *Buddhist* widows per 10,000 of female population.

In the province of Burma the births of the Buddhist population per 1,000 women of reproductive ages (15-45) *are 149*, as against *128 for all India*.

Figures for *birth by religion* (Hindu, Mahomedan, Parsi, etc.) are not available for India but *Burma figures* would seem to show that *early co-habitation and premature mater-*

nity tend to exhaust the frame and impair the capacity for further bearing. The *most prolific* races in India are those least addicted to child marriage—*viz.*, the Animists or aboriginal tribes.

The *efforts so far to influence public opinion* against child marriage have not had very great effect.

Rai Bahadur Pandit Hari Kishan Kaul, C.I.E., Census Superintendent, writes (*Punjab Census Report*, 1911) "But in spite of all agitations for stopping early marriage, Reform Societies do not appear to have had much practical effect so far, *even within their own circles, much less upon the masses.*"

All-India Census Report, 1901 (*page 118*).—"The evil effects of early marriage on female life are clearly shown by a comparison of the proportion of females to males who are living at the age of 10-15, in each province, with the proportion of females of that age who are married.

In Burma practically no girls of the age in question, are married, and this is the part of India where the proportion of females at this age is *highest*, compared with the proportions at all ages.

The *second place* in this respect is shared by *Madras* and *the Punjab*, where girls of this age are less frequently married than in any other part of India outside Burma, while *Bengal*, where child-marriage is most common, stands at the bottom of the list. It may therefore be said that the proportion of females at the ages 10-15 varies inversely with the number who are married at this period of life."

[I understand this conclusion has been tested by reference to the figures for 1911, and found generally correct. D. F. Curjel.]

Punjab Census Report, 1911.—"It has been shown that the castes which practise early marriage on an extensive scale, have generally a smaller proportion of females at the age period 12-15.

Inquiries into a large number of cases show that *where the marriage of young people is consummated at an early age, a fairly large percentage of wives die of phthisis*, or other disease of the respiratory organs, or from some gynæcological complication, *within 10 years of the consummation of the marriage.*

III. Poverty and Bad-Housing in India.

The adverse influences of poverty are equally evident in India, as in other countries.

At a time when India is teeming with suggestions from would-be social reformers, suggestions as to the best methods of improving the poverty-stricken lower classes, scarcely come within the province of this paper.

Yet it has to be realised, when considering the improvement of the conditions of child-birth in India that the greater number of India's population live in much poverty and are exposed to the mal-nutrition and bad-housing conditions dependent on this. The majority of Indian children are, thus, born into a bad environment, and mothers, at the time of their confinement, are under very unfavourable conditions. The average Indian mother has to work hard, her food often is not good, and her general physique poor. There are, however, great variations in type in different races.

Insanitary conditions are present in the homes of both rich and poor, and are *due to the mode of life of the Indian family.* From the mud hut of the poor cultivator to the mansion of the rich merchant, or the Rajah's palace, domestic sanitation is of the lowest order.

Owing to the Indian custom of whole families of relatives living together, dwelling—and especially sleeping apartments are usually over-crowded. The eastern mind does not realise the importance of cleanliness in one's surroundings as distinct from mere personal cleanliness; and refuse and filth of all descriptions are to be found in these rooms. Rats flourish there, and flies and other insects abound. The family latrine is usually adjacent to, if not actually in connection with, the common living-room, and even in the

houses of the better classes, a very unpleasant odour often pervades the surroundings. Domestic animals, especially cows and goats may be found living together with the family and littering the house with their refuse. [At a confinement to which I was recently called in a wealthy Scindhi merchant's home, an exciting spectacle was the feeding of the cow, lust before the delivery of the child. The cow being a sacred animal and a sign of fecundity, it is considered meretorious to give her to eat. The family cow was therefore most unwillingly forced up a flight of steps into the patient's room. (She wasn't used to step-walking, and needed a good deal of manual persuasion to come up.) There she was fed with fresh green rushes, which had just been brought into contact with the patient's body.]

I have endeavoured by means of photographs to show some typical Indian homes.

What the effect of such surroundings must be on mother and child, we can judge from the result of investigations in other countries, as to the effects of bad-housing and disease.

The large *question of bettering the conditions of life in the lower classes*, is such that it can only be slowly solved, and as the result of much experiment and the experience gained therefrom.

One notes from Indian statistics, that contrary to the experience of other countries, the infant mortality tends to be equally high in Indian rural districts as in towns. It is difficult to see how very much can be done at present by the authorities to improve this unsatisfactory state of affairs in *village districts*. The attempt to entrust village sanitation to local authorities has been disappointing. Till the people themselves realise the harmful effects of present conditions, but little progress can be hoped for.

But in *municipal areas* legislation on the subject of bad-housing is urgently needed.

Municipal authorities must be made to realise their responsibilities with regard to the districts over which they have control.

A step forward has been made by the appointment of *Health Officers* in most of the larger towns, but at present the powers of such medical men are often very limited ; especially as regards the supervision of buildings, and the erection of new houses, and of means of combating defective sanitation.

Until the municipal authorities sanction the necessary expenditure, little can be done. The *great difficulty is to impress Municipal Councillors*, (men who often are absolutely ignorant of the vital importance of sanitation in the fight against preventable diseases and of the evil effects of bad-housing) with the necessity of sanctioning the expenditure of public money in this way.

In some towns *Sanitary Conferences* are being held and eminent authorities on the subject invited to give lectures that citizens may learn of the ways in which diseases may be prevented, and be made to realise the advantages of such proposals to their ownselves, and to the community to which they belong.

It is promising that in some places (Bombay, Delhi, Lahore, Karachi, etc.) such instruction is being given not only to male audiences, but *special lectures are given for women*, because I feel sure that if the women of India can be made to realise the harm they do to themselves by the way in which they live, they would set about to alter these conditions.

The Purdah System.—There is a tendency to ascribe to this cause all the evils to which the flesh (of Indian womanhood) is heir, and to overlook the fact that the larger number of Indian women live free from purdah.

Purdah is *chiefly observed* by the better class women of the Mahomedan communities, and by the richer Hindus in those parts of India where Mahomedans mostly congregate.

I have worked in the heart of purdah-dom, and visited zenanas in Delhi, Agra, and Benares, and been struck afterwards by finding much the same diseased conditions in other parts of India, such as Sind, where but little purdah is observed.

There must, therefore, be *one factor common to both states*, and this I think is found in the extremely insanitary states of the homes of these women and to their ignorance regarding the simplest matters of domestic hygiene.

The purdah system has been blamed, and rightly so, for *keeping back education* for Indian women, but I have discussed the question with many social reformers and workers of much experience, and it does seem as if the worst evils of the purdah system were now passing gradually away.

As education spreads among the purdah-observing classes, a higher standard is set and husbands expect more from their wives, and with this demand the outlook for the woman is enlarged.

With the advent of trains, cheap railway fares, and of motor-cars, there is much movement about the country, and it is often surprising to find, when talking to zenana women, how much they have travelled. I remember an interesting conversation with an enlightened Mahomedan gentleman, educated in English customs, whose wife I had just been to visit in a very charming house, but living in purdah.

I had been struck by his clever little girl, ten years old, who had been living the outdoor life of an English child, but soon I heard was going to enter purdah, while her slightly-older brother was being sent to England for his education.

The father explained his reasons for acting thus—he said he had thought the matter over and decided that all social reform must go slowly, that the *purdah women were not yet ready* for complete emancipation, nor had the Mahomedan men yet learnt how such "free" women should be treated.

He considered that by educating his daughter he was fitting her to be the wife and helpmate of an "enlightened" husband, and that they in their turn granting their daughters still further education and consequent liberty, a condition of society would be reached in the future, when the relations of the sexes would more closely resemble western ideals.

It is in *the poorer homes* that the *worst evils of the purdah system* appear—people whose status is just sufficient, for them to consider purdah necessary, and where in the poorest surrounding, women have to live a confined life.

I knew fairly intimately such a family in Agra—they were carpet-makers,—and one saw how each girl of the family in turn had suffered from the enforced confinement. In this family *malnutrition* and *osteomalacia* were markedly present, and in each case seemed to set in about the onset of puberty when the girl began to observe the stricter purdah regulations.

Undoubtedly the closer confinement of the purdah system tends to spread diseases such as *tuberculosis*, for whose care fresh air is an essential factor. (Dr. Lankester's observations in his Survey of Tuberculosis in India lend support to this statement.)

One of the saddest cases I have seen was that of a girl, the young wife of a small chieftain in the Simla hills. Her dwelling-place was a large building set in the midst of most beautiful scenery. The women's quarters contained quite large rooms, but unfortunately were only ventilated by doors overlooking a large unsavoury courtyard filled with the household refuse—the little patient, aged 14, was kept strictly in purdah. She suffered from tuberculosis and the disease was advancing rapidly.

In *conclusion* one learns, I think—

(1) that as enlightened opinions spread, the purdah system is gradually being modified and becoming of less danger to the communities that adopt it;
(2) that the great weapon in the fight is the education of the women themselves in domestic hygiene, and that this opens a large field to women health-visitors and other social workers, and,
(3) especially, that the one great method of improving the condition of all Indian women and children, is by improving their environment.

I do not think that the purdah system in itself is necessarily a hindrance to the women who practice it obtaining skilled medical relief, especially at the time of child-birth. *Few*

Indian women, be they purdah or not, submit readily to obstetric and gynæcological treatment at the hands of a male practitioner.

Granted female hospitals and dispensaries and women doctors to attend them, such women readily seek treatment. *Purdah women as well as their freer sisters, suffer from the present shortage of qualified women practitioners in India.*

IV. Ignorance and disease among Indian women and children—its effect on the conditions of child-birth in India.

The Indian woman is usually a *good mother* to her children, but her lack of knowledge often leads her to show her affection in ways inimical to the baby's well-being.

Compared with western countries the young child is of considerably more importance to the family among many castes (see section on child-marriage) and is treated as a personage of great importance in the household.

Poverty and want of knowledge leads a pregnant Indian woman to *neglect her health* during a pregnancy. Ignorance and tradition leads her to *employ a dai* at her confinement.

At first following the advice of her dai, and later her family traditions, she neglects often the cleanliness and care of the child's body, applies doubtful remedies to its eyes, and is injudicious in the choice of its food.

She allows flies and vermin to settle on the child's skin, and when sores appear and with unskilled treatment, spread extensively, she sees in the condition the work of some haunting spirit, and seeks to propitiate this presence by tying on the child's body an appropriate charm or token.

It is rare to find an Indian woman the subject of alcoholism, but unfortunately she also differs from her western sister, in that she readily gives her child pellets of *opium*, if it cries much—and the effect on the infant of the two conditions is perhaps equally harmful.

One great advantage she possesses over western mothers, she *thoroughly realises her maternal duty of feeding her child*, and to the prevalence of *breast-feeding* must be attributed the survival of Indian children, in what appears to be often, the most unfavourable environments. She is even inclined to go to the other extreme, and delay weaning till her own health, that of her child, and future offspring all suffer.

If from any cause the mother cannot feed her child, and a wet nurse is not available trouble usually follows—for it is *extremely difficult to keep* milk and other foods free from infection in an Indian house, usually swarming with flies, and in the insanitary conditions prevalent there. *Large numbers* of infants *die in the first year* of "wasting diseases," diarrhœa, and other *digestive conditions.*

I often think the artificially fed baby in the poorer classes has a decided advantage over its richer brother or sister It at least is given cows' or goats' milk, (asses milk, though so wholesome, is rarely given children in India, even in parts where it is easily obtainable) and it is fed with a spoon out of a vessel, which is usually of metal and cleaned.

The anxious parent of the better classes uses for his child a *baby's bottle of western make*, without however observing precautions as to cleaning it properly. He reads *patent-food* advertisements and his child suffers from the injudicious use of these products. He impresses on his wife that the substance cost much money, and, comes from overseas, and therefore will do the child good. The result is often pathetic as in a severe case of diarrhœa I saw in a young infant, the cause of which, turned out to be due to the fact it was being fed out of a tin of decomposing *condensed milk*, which had been opened *some days* before. (With rational feeding this child at once improved.) Many weakly babies might be saved if there were a staff of capable and tactful women Health Visitors to instruct young mothers.

Owing to *unhealthy environment, diseases of the respiratory system* and especially *tuberculosis*, find favourable soil and flourish readily in the Indian infant.

(See Note on Tuberculosis in Indian Women and Children.)

In those parts of India where *malaria* is endemic, the insanitary surroundings lead to prevalence of mosquitos and the Indian child is easily infected, as is shown by the high "Splenic Index" (number of enlarged spleens) in such localities.

Congenital syphilis exacts its toll in eastern as in western countries. No definite figures are available for India, and experience shows that the incidence varies very much in different parts of the country, that the disease is *very prevalent in towns* and especially at *sea-ports.*

As a cause of (1) sterility in women, (2) of still-births and of (3) deaths during early infant life, it is an important factor and cannot be ignored. [In a report from the bacteriological laboratory of the King Institute, Madras, a note states that the Spirochaeta Pallida was found in *20* per cent. of the macerated foetuses sent from the Maternity Hospital.]

A meeting was recently held in Bombay to consider the best way of facing the problem of venereal disease, and as in other countries, the conclusion was reached that education of the people in the evil consequences of syphilis, and provision of facilities for suitable treatment, are both necessary.

In my experience Indian women are better versed in the recognition and consequences of syphilitic infection than western women and *readily come for treatment.*—I do not refer to the prostitute class but to the "innocent victims".— It does seem to me, however, that they are too much inclined to look on infection as a necessary evil of married life. With education, they may perhaps change this point of view.

More education of the male community, regarding the evil effects of the disease on themselves and their offspring is necessary and of the advisability of seeking early efficient medical treatment, rather than the freely advertised "cures" of "quack" vendors.

The Incidence of Tuberculosis in Indian Women and Children.—Tuberculosis is not considered in India any barrier to married life, and one is often faced with the piteous spectacle of a tuberculous women, in whom during her pregnancy the disease has rapidly advanced, and who gives birth to a weakly *infant,* which readily falls a victim to the *same infection.*

For much of the tuberculosis in India the *purdah system* is to blame and authorities such as Dr. A. C. Lankester prove by figures that in any given town the incidence of tuberculosis is higher among those castes which observe purdah than among those whose women live a more open-air life (be these high caste Hindus or Mahomedans). He has shown that among these purdah-keeping classes *the female mortality from tuberculosis* is out of all proportion *higher than the male,* the latter of course being free from the restrictions applied to the women of their community, but the incidence of tuberculosis among these men *is higher than among the males* of the non-purdah observing classes in the same town, and living otherwise under the same conditions. This he explains by the fact that in infancy these men as young children lived with their mothers in the zenanas, and were thus exposed to the infection.

It seems evident that the cause of the high mortality among Indian women and children from tubercular disease, although probably *helped* by the confined and airless state in which many purdah-women live, must be sought elsewhere, for one finds tuberculosis rampant among whole classes of the population, in provinces such as Sind, where but little purdah is kept. One wonders therefore if the *bad-housing and sanitation* in Indian homes is not one of the chief aetiological factors ? At night *whole families* sleep together in small dark ill-ventilated rooms, and there is no attempt to *segregate a person infected with the disease,* and weakly *mothers and young children* are readily infected.

The *Gland—Incidence in Indian* children.

It is difficult to estimate the number of *phthisis cases in a community,* but Dr. A. C. Lankester, in the course of his special Tuberculosis Inquiry in India examined over *900* school-children, and found *29·49* per cent. with enlarged cervical glands.

(*Indian Journal of Medical Research, Vol. IV*)

APPENDIX VI.

Reports on the present conditions of Child-birth in various parts of India.

Sub-section.

I. *Figures* showing the comparison of the Infant Mortality rate in India, with that in other countries, and the High Female Mortality at the Reproductive Ages in India.*

II. Annual Sanitary Report of the *Central Provinces and Berar*, 1916.

III. Annual Report of the Sanitary Commissioner of the *United Provinces*, 1916.

IV. Infant Mortality in *Madras*.

V. Annual Report of the Health Department of the *Delhi* Municipality, 1916.

VI. Infant Mortality in *Bombay*.

* *Note.*—Sub-sections II, III, IV, V, VI have been omitted on account of want of space.

1. *Mortality figures* for India showing—

(*a*) *the waste of child-life*,

(*b*) *A comparison of the Infant Mortality* rate in India with that in other countries,

(*c*) The *high female mortality* at the Reproductive Ages.

The "Pioneer," *Thursday, September 6, 1917.*

The Waste of Child-life in India.

No one who has devoted even cursory attention to questions of public health in India can fail to realise how enormous is the waste of human life in this country resulting from the persistent violation of the elementary laws of hygiene. The reckless pollution of water supplies is a constant and deadly cause of disease and other practices which bring about like results might readily be cited by anyone acquainted with the habits and customs of the masses of the people. India's record in the matter of infant mortality is an appalling one. In the *Central Provinces* last year the infantile death-rate reached 265 per 1,000 births, in *Delhi* 223 per 1,000 and in the *United Provinces* 209 per 1,000. The lowest rate was recorded in *Madras*, and even here the ratio was over 182 per mille. Where it has been possible to introduce hygienic methods in maternity cases considerable improvement has been affected. This work, however, is frequently attended with extraordinary difficulties, owing to the ignorance which has to be overcome and the existence of religious and other prejudices which cannot easily be removed. Still, it is evident that progress is being achieved, although it is in the nature of things lamentably slow. Some idea of the obstacles which have to be surmounted may be gathered from a perusal of the recent report of Dr. Crake on the Municipal Administration of Calcutta, which includes a statement by Mrs. Lewis, the Lady Health Visitor, describing the experiences encountered by herself and her staff of midwives. The bustee people she affirms hid women who were about to become mothers and refused to give information or help. The most absurd rumours were current. It was declared that the British Raj was in need of soldiers and that all the male babies delivered by the Corporation's midwives were to be taken for the Army. Another rumour was to the effect that before the war could end the King had to offer young children as sacrifices. It seems to be easier to dispose of such grotesque reports than to ensure proper treatment for mothers and their newly born infants. The descriptions given in the report of the lying-in rooms visited and of the methods resorted to fully indicate the reasons why the death-rate among newly-born infants is so enormous. But where it was possible to ensure skilled attention the results were remarkably good, and not a single case of tetanus occurred among the children brought into the world by

the Calcutta Corporation midwives. There is a *supervisor* in charge of each group of 4 midwives.

Tetanus is usually due to uncleanly midwifery and works great havoc among infants in India during the first week of life. Apart from attending births, the Lady Health Visitor at Calcutta and her staff kept a number of infants under observation until they were three months old and as a result of their care the death-rate in the case of 464 babies between one week and three months was 41 per mille as compared with the usual rate of 82·7 per mille. But if the work is to be carried on on an extensive scale a large addition to the staff will be required. The question of a good supply of milk at a reasonable cost is also of great importance and Dr. Crake has no hesitation in affirming that municipal dairies, capable of supplying every infant in the city, ought to be established.

This question of infant mortality also occupies a prominent place in the annual report of the *Sanitary Commissioner* of the *United Provinces* for 1916, which was recently published. The actual number of infant deaths during the year was 423,130 which is equivalent to 209 per mille of the births. In the Naini Tal district the mortality was actually as high as 348 per 1,000 in Farrukhabad 279, in Pelibhit 268, in Shahjahanpur 266 and in Bareilly 262. The greatest mortality in the United Provinces was attributed to fever, which is said to have claimed 205,583 infantile victims, tetanus which, as we have already stated, is usually the result of uncleanly midwifery, coming next with 116,833. In Basti district 84 per cent. of the deaths of children of less than one year were attributed to tetanus and in most of the other districts over 50 per cent. of the infantile mortality was set down to the same cause. It is evident, however, that the figures cannot be relied on, and the Health Officers of the leading Municipalities have been instructed to enquire into the age of each child reported to have died of tetanus and also to make a personal diagnosis. By this means it is expected that the real significance of tetanus as a cause of infant mortality will have been ascertained by the close of the current year.

The Lady Superintendent of the Dufferin Hospital, Calcutta, has undertaken to form an infant's clinic, which, if successful, is likely to lead to similar undertakings on a large scale.

India.—In India not only is the Infant Mortality very high, but the number of female deaths at the reproductive ages is serious.

(*i*) *In India out of every 1,000 children 250 die within the first year of life.*

A comparison of the Infant Mortality Rate in India with that in other *countries.*

Country.	Deaths of children under 1 year per 1,000 births. Average (1902—11)
France	132·4
Germany	186·6
Russia (European 1895-1904)	206·5
Ceylon	180·2
Japan	159·8
Hungary	207·6
Chili	293·4
New Zealand	64·3
Sweden	84·4
Australian Commonwealth	87·5
England and Wales	127·3
Scotland	116·1
Ireland	96·1
United Provinces	352·0
Bombay	320·0
Burma	332·0
Bihar and Orissa	304·0
Punjab	306·0
Bengal	270·0
Madras	199·0

High Female Mortality at the Reproductive Ages.

Province.	Average number of female deaths per 1,000 male deaths between 5 and 15.	Average number of female deaths per 1,000 male deaths between 15 and 30.
Bihar and Orissa	799	951
Bombay	970	1,043
Burma	858	862
Central Provinces and Berar	881	1,100
Madras	923	1,232
Punjab	1,055	1,010
United Provinces	897	1,080
Bengal	749	1,193

At the age 15—30, the Indian wife has not finished her normal span, *therefore the majority of these deaths must be due to child-birth.*

Figures showing the heavy loss of child-life in India.

The *first fifty married women* attending the Out-door Dispensary of the Lady Dufferin Hospital, Karachi, one morning, were asked :—

(1) How many pregnancies they had had.
(2) How many of the children were now alive.

The following results were obtained :—

	Number of Pregnancies.	Children surviving.		Number of Pregnancies.	Children surviving.
(1)	4	3	(27)	7	3
(2)	3	1	(28)	12	3
(3)	5	...	(29)	7	2
(4)	7	6	(30)	8	3
(5)	4	4	(31)	3	1
(6)	3	1	(32)	2	1
(7)	7	3	(33)	3	3
(8)	5	2	(34)	5	2
(9)	11	4	(35)	1	...
(10)	7	5	(36)	2	2
(11)	3	3	(37)	1	1
(12)	7	2	(38)	1	1
(13)	12	7	(39)	3	2
(14)	1	1	(40)	4	3
(15)	11	4	(41)	3	...
(16)	4	3	(42)	3	3
(17)	2	2	(43)	3	...
(18)	5	3	(44)	4	4
(19)	7	5	(45)	5	3
(20)	7	4	(46)	1	...
(21)	2	1	(47)	6	4
(22)	8	2	(48)	4	4
(23)	4	...	(49)	6	2
(24)	5	2	(50)	5	2
(25)	1	1			
(26)	7	2	Total	241	120

APPENDIX VII.

SCHEMES FOR IMPROVING THE CONDITIONS OF CHILD-BIRTH IN INDIA.

ub-section.

I. A Health Association in a *Town*. (Karachi Health Association.)

II. The Provision of Medical Relief in *Rural* Areas. (Illustrated by cuttings from various papers.)

(This appendix has been omitted for want of space.)

CHAPTER IV.—PAPERS CONTINUED : Dr. M. WYLIE, Dr. AGNES SCOTT, Dr. K. O. VAUGHAN.

BY

* Marion A. Wylie, m.a., m.b., ch.b. (Glasgow), *United Free Church of Scotland Mission, Nagpur, C. P.*

In order to be able to draw up any scheme for the improvement of the conditions under which the vast majority of children enter life in India, it is necessary to know as much as possible of the conditions which actually exist, and of their cause.

No scheme would be worth consideration which was not practical, and to evolve a practical scheme, one must first of all realize that many of the existing conditions, though much to be deplored, are the inevitable outcome of centuries of superstition, poverty, and ignorance, and will be as difficult to remove as the consequences of such conditions must be in a land still fast bound by the rigid laws of caste and custom. These laws though they are perceptibly relaxing, are still in some parts of India insurmountable obstacles in the path of progress, and it will take years of patient teaching to change them. Any scheme which does not take them into account is doomed to failure. They are regarded as obligatory and absolutely essential for the well being of the people, and to ask a Hindu to break away from them is to ask him to commit an unheard of crime against society. Compared with Hindus, Mahommedans are easy to deal with. They have not the fixed unalterable laws of caste, but they adopt and practise many of the same customs which are detrimental to the life and health of mother and child.

Here let me say that I can speak only for Nagpur and for this part of the Central Provinces where I have worked. And here too, I may say that I consider it quite impossible to formulate any scheme which could be applied to the whole of India, or to any large part of it. Conditions and customs are so different in even neighbouring districts, that improvements which could easily be carried out in one, might be wholly impracticable in another. So that each province or section of a province must work out a scheme of its own.

One of the most potent factors which militate against healthy conditions of child-birth, is the rule laid down by caste, that a woman is in a condition of defilement until ten days after delivery. This fact in itself might not have any untoward effects on the state of mother and child, if it meant only that they are deprived of the services and care of their own caste people during that period. It might even be counted a factor to the good, for it would, and does allow of trained midwives and nurses, Christian or other caste, being allowed

* Prize paper.

to render assistance. But, unfortunately, in the vast majority of cases such help is unavailable, and the result is the time-honoured custom of seeking the services of the low caste dai, and the shutting off of mother and child in a dark, airless corner of the house.

What do we find when we are called to a labour case in the average Indian home ? A small dark room devoid of all means of entrance for light and air. The narrow, low door, causing us to bend nearly double, is carefully screened with matting and sacking. The window, if there is one at all, is closed with wooden shutters, and any chinks are stopped up with paper or rags. The bed, though one is often not to be found, is in a corner, and is hung round closely with heavy purdahs to further guard against any chance breath of air reaching the patient. Old clothes, mostly filthy from age and use, often soaked with discharge, cover the bed or the floor on which the confinement is about to take place. A small " dip " is burning, giving the only light there is, and filling the air with smoke, to add to the discomfort of the already sufficiently vitiated atmosphere. Hot water has not been thought of, nor are any vessels to be found for washing one's hands or cleansing the patient, until after long delay and many reiterated demands. Clean cloths are not forthcoming to act as pad or binder, and there is nothing ready to wrap round the newly born infant, or to replace the wet and blood-stained garments of the mother. If the case is a moderately quick one, the dai is not called upon to do anything but cut the cord as soon as the child is born. This she does with a knife which is not kept or cleaned for the purpose, but is encrusted with the rust and dirt of years. In some cases the cutting is done with a split bamboo—said to be a fertile source of tetanus. She then massages the abdomen of the patient—sometimes making her stand up against the wall for the purpose—till the placenta comes away. The placenta is covered with salt and burned, or buried in a corner of the room. A very tight roll of cloth is then wound round and round the mother's waist with the object of keeping the uterus in the lower abdomen, but it is applied in such a way that it has no effect whatever in supporting the muscles of the abdominal wall, or in aiding contraction. The dai then inserts a vaginal tampon composed of a mixture of salt, gur and huldi. Often a pice is inserted also. Sometimes the tampon is composed of cotton wool (which has probably served previously as the stuffing of a quilt or pillow) soaked in native spirits.

But these normal cases are comparatively safe from the intervention of the dai, as they are often over before her arrival. This was the case with more than half of the 2,500 cases reported to us by dais during the current year. It is in cases of delayed labour that so much mischief is done by interference. It is unnecessary here to cite instances such as we have all met with, of foetal arms pulled off, rupture of the uterus, lacerated cervix and perineum, and applications which result in partial or complete atresia of the vagina afterwards. It is enough to say that in almost all cases where delivery is not rapid, the dai is called on to make several vaginal examinations beforehand with the

object of foretelling when the child will be born. This she does with hands unwashed and anointed with some unaseptic lubricant, usually either castor or sweet oil. When delivery is over, if the placenta does not come away within five minutes, she does not hesitate to plunge her hand into the uterus and remove it.

The infants' cord is dressed with either huldi, or charcoal, or red-earth. The child is not put to the breast for three or four days.

Meanwhile it is fed on either fresh or condensed milk, often on a rag leading from the milk vessel. A loathsome practice here is to give it gur mixed in its own urine. Sometimes it is given native wine. No wonder that the mortality within the first 15 days is so high.

The mother is usually starved for the first four days, and her milk is consequently long in coming and of poor quality. She cannot be attended to by her relatives till after the tenth day, and has to depend on the daily visit of the dai. Urine and faeces are passed into a lota which remains under or beside the bed until the dai's next visit. But as a rule the patient rises and attends to herself on the third or fourth day.

These conditions are by no means confined to the poorest or most ignorant classes. I have attended the families of Rajahs, where many of these practices were carried out, and met with the most strenuous opposition when I introduced ventilation and aseptic measures. The opposition came, however, only from the women of the family, and by appealing to the men, who had been educated in some instances in England, I had my way.

This suggests the first step in any measure for reform. Let us educate the women. Compulsory education will doubtless come for girls bye-and-bye. But meantime, in those girls' schools which do exist, and in all boys' schools, let us insist on hygiene, simple physiology, and domestic science.

Secondly let us educate public opinion on the subject of child-marriage, so that what was an inviolably sacred custom may become as unlawful as widow-burning or female infanticide.

Then, whatever steps we take to reform the present conditions of child-birth will meet with some response from the patient herself, and what is even more important, from the mother or mother-in-law, and from the other women of the household.

When I speak to my dais on the subject, *e.g.*, of the treatment of the third stage of labour, they say, "Miss Sahib, these women will not listen to us. If we will not put in our hand and pull out the placenta, they will send us away, and call another dai." When I ask why such-and-such a baby died, and receive the usual story of vomiting and diarrhœa and wasting away, they say again, "they would not listen to us." They would not let us put the baby to the breast, but gave it their own mixtures, and so it died.

So that until the whole community is educated to the point of accepting our advice and treatment, all our efforts at improvement will meet with but little success.

But undoubtedly, to any one actively engaged in trying to lessen infantile and maternal mortality, the great problem is how to deal with the indigenous dai. In Nagpur she attends practically all cases of labour among Indian women. Her calling is a hereditary one, and she passes on her practice to her daughters and daughters-in-law. Her methods being such as we have seen, the question arises :—Is it worth while to try to reach her at all, or should we leave her alone and set to work to train more promising pupils who will gradually take her place ? In places where the calling is not hereditary, as, *e.g.*, in Jubbulpore, the dai might comparatively easily be ousted. But in Nagpur such a proceeding would take generations, though probably the sooner it could be done, the better. The question would then arise :—Who is to take her place ? At the present rate the output of trained midwives yearly being practically negligible, we are simply providing no substitute at all. In 1916 there were 4,229 births in Nagpur. Of these, 265 were attended by the doctors or nurses of the mission hospital, 90 by the Dufferin Hospital, a negligible number by Indian practitioners, and the rest by dais. Of this remainder, 2,499, over 64 per cent., were attended by the Maug dais whom Dr. Agnes Henderson has taken in hand, and whom I, at present, supervise. In Lady Dufferin's day this attempt was begun. Our Nagpur figures show the result after a quarter of a century of work. But it is only within the last four years that anything practical has been achieved.

From these figures we see that the dai is practically the only midwife the majority of women employ. For one thing, she is the only one they can afford. The doctor and the trained nurse will continue to charge high fees, and so will be beyond the means of the poor, until that happy time when Government can provide and pay sufficient trained midwives to go round. But these figures also show that the majority of these dais are willing to learn better methods.

The course we adopt in Nagpur is to bring the dais twice a week to report their cases. These cases are inspected twice during the first fifteen days by trained midwives. The dais are paid for each case reported. They are fined for the death of either mother or child. They receive an additional reward if they call in skilled assistance for a difficult case, or if they bring the case to hospital. In this way the dais have come to believe that we are their friends and not their enemies, as they thought at first. The instruction we give them is of the simplest, and is mainly regarding cleanliness, and the need of realizing before it is too late when a case requires skilled assistance. We do not set much store by examinations, but judge rather by the results of inspection.

Dr. Henderson's idea has been " not so much to give a course of instruction to dais, examine them, give them certificates, and let them pass out, but rather to keep in touch from year to year with all the dais who are willing to come, inspect their cases, give them simple instruction for some weeks annually, have talks with them on current topics (*e.g.*, small pox or plague), or any

special difficulty in connection with the maternity cases reported by them and also to get into touch with their children." She has established a school which is at present attended by about thirty Maug children, and part of the routine is hand-washing and nail-cleaning, in view of their future profession. Sir Pardey Lukis's manual is used as the dai's text book, though much has to be omitted as it is beyond their grasp.

The work is financed by the Victoria Memorial Scholarships Fund, the Nagpur Municipality, and partly by Dr. Henderson personally. I have come to the conclusion that several of the younger women among these dais would be willing to come into our hospital for training, and would make capable midwives, if it were made worth their while to give up their present mode of obtaining a livelihood.

In Jubbulpore, the Victoria Memorial Scholarships Fund gives a grant of scholarships. At present, four women undergo training for one year, and each receives Rs. 6 per month. If this could be done on a larger scale, and if the daughters of dais could be made the recipients of such scholarships, the mothers, and in time the daughters' own children would benefit, and gradually the effects of training would be felt by the whole caste and profession. In Berar, Government scholarships have already been established for the general education of the children of the dai class "to render them more receptive of progressive ideas when they grow up and take to their hereditary profession." These scholarships could, with benefit, be carried on to a course of training in hospital. Then, in order to keep them in touch with their training hospital, scholars might be paid a small sum monthly when they start practice. Rewarding them for each case they brought to hospital would answer the same purpose in a better way. A simple outfit might also be supplied to them, comprizing blunt-pointed scissors to cut the cord with, ligatures for the cord, soft linen to dress it, catheters, enema syringes and antiseptic lotions. But such appliances should be entrusted only to those who have received a full course of training in hospital, who report their cases afterwards for inspection, and who satisfy their inspectors that they put in practice the antiseptic methods taught them during their training.

It seems even now that the time is ripe for compulsory registration and inspection. For registration of all dais an Act of Legislature seems necessary. The Jubbulpore Municipality has, however, recently introduced a licensing fee leviable on all practising dais, which serves the same purpose. In time it would be possible to register only those dais who had received a course of instruction. Until such time as fully-trained women are plentiful enough to go round, a trained midwife should be established in each area, who would be a reliable inspector, and could also give help in difficult cases. Inspection should extend not only to the patient and child, but to the dai herself—her clothes, hands and nails, and her appliances.

A list of registered dais could be put up in tahsils, octroi posts, etc., for the information of the public.

The public should be educated by lectures to employ active and clean dais, so that the dirty and unfit would be gradually eliminated.

Dais should also be encouraged to report ante-natal cases. Too often the weakly condition of the infant at birth is due to the ill-health and ignorance (to say nothing of the youth) of the mother. Disease, especially venereal disease, plays a principal part in producing abortions, premature labours, still births, and the weakly children that soon succumb to post-natal conditions.

It is very necessary, therefore, that means should be established to bring expectant mothers under supervision and regular treatment. Maternity centres for this purpose are urgently needed, and could be run in connection with existing dispensaries.

The indigenous dai, if she received a small reward for her trouble, could bring numbers of patients of the most needy and urgent description.

It is contended, however, that "the prejudicial influences on infant life are more serious after than before birth. In other words, the surroundings or external conditions into which a baby is born have a greater influence for good or for ill on its vitality than the health of its mother, and the possible incidence of disease on the part of the father or mother before its birth." Be this as it may, it should in no way tend to relax our endeavours towards establishing ante-natal clinics and maternity centres, but it should cause us also to redouble our efforts towards improving the surroundings into which an infant is born. Milk depôts, baby clinics, infant health visitors, infectious diseases hospitals with provision for puerperal fever cases and their babies,—all will help.

But the problem will still remain,—how to induce the ignorant and superstitious mother to take advantage of them ? Lectures and pamphlets do not reach her, or their teaching and advice are overruled by the fears and prejudices of the older women of the household, who will not depart from the laws and customs of centuries. She can only be reached through the dai—the invariable attendant at the function of child-birth. Educate the dai, therefore, as far as she can be educated, until such time as her place can be taken by more intelligent workers. Let every dai who has a license to practice know at least the main facts regarding the care of infant life. Let her not be a loser by reporting the condition of the infants under her care, and she will be the friend and helper of our efforts towards improvement, instead of being an obstacle in our path of progress.

The question of means must be faced. Every scheme will cost money, but when one considers the present fee which the average dai earns (in Nagpur among the poor it is 10 pice for the birth of a boy, 5 pice for a girl ; among the well-to-do Re. 1 for a boy and 8 annas for a girl), a very small reward will make a large addition to her income. Ante-natal and post-natal clinics or maternity centres, if run in connection with existing dispensaries, would cause little extra expense. The money laid out in founding scholarships, and in providing

the salaries of trained midwives and inspectors could not be invested more profitably, and the state would soon benefit materially by the results.

Undoubtedly there is great need for research on all the problems which face us regarding this fundamentally important subject, and it will doubtless be some time before the question can be solved as to which influences are most at work in causing a high infantile mortality. But meantime everything should be done to lessen or prevent their incidence, and the means of meeting this expense also should be freely provided.

These are matters not only for medical officers and the medical profession and for municipalities, but for Government itself.

In the United Kingdom, the mortality of children under one year of age was 10 per cent. in 1914. In Nagpur infantile mortality in 1916 was over 30 per cent. The majority of the causes given in both cases were preventable. Lord Rhondda, during his short tenure of office as President of the Local Government Board, declared his determination to save the lives of 50,000 infants every year by improved legislation. Surely then we in India could do vastly more to put a stop to this, one of the most serious drains upon the vitality of the Empire.

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Any scheme of improving the conditions of child-birth in India must differ in some points according to the part of India to which the scheme is to apply, for India is a vast country and customs differ largely in different provinces.

The part of the country for which I propose to work out a scheme is the Punjab in general and Karnal district in detail every part of which district is more or less wellknown to me and I consider that a scheme worked out for such a district might well apply to any other in Northern India.

The great problem, in fact the crux of the whole matter, is the part played by the Hereditary or Indigenous Dai; if by legislation we could exterminate the whole race of these women the problem would have a comparatively easy solution, but we cannot; their hold on the people of the land is too strong. Over and over again attempts have been made to replace these dais by women of another class, trained more or less in modern methods, but almost in every case they have sooner or later had to retire from the field, vanquished by the indigenous dai, who, prompted by acute jealousy makes use of methods of warfare of the most insiduous kind to dislodge her rival, and because the superstitions and feelings of the people support her, she has been the conqueror.

The indigenous dai is, therefore, impossible to remove. We are left then with the only other alternative, namely, to put a stop to her death-dealing practices, replacing them by others which civilisation has proved to be less injurious to the people concerned namely to the mother and child. She must,

* Prize paper.

in other words, be trained and having been trained she must be registered and supervised. These words on paper sound fairly simple but how to do this is the problem. At present there is no sort of registration, these women practice undeterred wherever and among whom they please, spreading disease and death among women and children encouraged by the ignorance and superstition of the people among whom by hereditary rights they ply their trade. An educated man may desire a better trained woman to attend on his wife, but he is helpless against the stone wall of ignorance and prejudice built and kept up by the older women of the zenana who are the real rulers of the house. One of the fundamental changes needed, therefore, is education of the women in these matters, and along with the women the men also must be taught; this education should be carried on synchronously with the training, registration and supervision of the dias, so that as the demand for trained attendants on women at child-birth increases, the supply may also be forthcoming.

I.—Education of Women and Men.

The education of the men and women on the subject of the dangers of employing ignorant and untrained women, such as the indigenous dais, is a question which I do not intend to dwell on at length. Hygiene and allied subjects can be taught to girls in the schools by properly trained teachers, but this will only inform a very small fraction of the women of India, the rest must be taught in their homes by Health Visitors who should be employed systematically in towns and villages. These should be trained women in order that they be qualified to guide pregnant women and nursing mothers, they should give special attention to these and to young children in their visiting, as well as giving instruction in ventilation, food, clothing, sleep and exercise and other matters as an ordinary routine.

A modification of the course given to Sanitary Inspectors together with courses in Home Nursing and First Aid would meet the case with regard to training.

Women can also be instructed at purdah gatherings.

The task of teaching the men is somewhat easier but its importance cannot be over-rated. Lectures in schools and colleges will give the necessary information to a large percentage. The matter should be presented to them clearly and concisely, a tabular form such as the following is valuable for impressing the main facts :—

Water-borne diseases . . .	Enteric, Cholera, dysentery, etc.
Diseases spread by flies and dirt . .	Infantile diarrhœa, ophthalmia, trachoma, skin diseases, etc.
Diseases spread by the indigenous dai	Puerperal sepsis, tetanus, gonorrhœa, etc.

The village men could be taught by lantern lectures with popular pamphlets and propaganda.

II.—Training and Supervising Dais.

Education of Dais' children.

With regard to the improvement of the Dai system it is necessary to keep clearly in mind the fact that any scheme at present put forward must combine the two duties of training and supervising. Every effort must be made while training the Hereditary Dais to get hold of and educate their daughters and daughters-in-law for these are the future hereditary dais. Scholarships have been offered for the education of these girls but more individual work is needed for making these known, so that they may be taken advantage of: this can be done by the officers working under the following scheme.

Punjab Central Midwives' Board.

The Punjab is divided for purposes of government into 5 divisions with an average of 6 districts in each division; districts are divided into four or more Tehsils; groups of villages are called Zails, there are 7-12 in each Tehsil. The Punjab Government has sanctioned the formation of a Central Midwives Board a copy of which is appended.* As much of the work done in drawing up the rules and regulations for the Punjab Central Midwives Board was done by me, I feel justified in quoting from it in this paper. Under this Board which provides for the examination of dais and midwives and their registration when qualified, there is also some provision for their supervision; this work is to be vested in a Local Supervising Committee in each Division of the Punjab.

Division.

Divisionally therefore there will be a Local Supervising Committee. Also provision is being made to establish a local Training School for dais in each division in connection with selected existing women's hospitals. A Central Training School is also to be inaugurated at Amritsar. Only a small proportion of the dais can be expected to go to the Divisional Schools, for, not only will it prove difficult to get dais to leave their homes and go to these schools, but the number of cases of labour available for training purposes is small, so only a few dais can be taught at a time.

We cannot, therefore, depend on these schools for training the majority of dais, who will have to be taught in their own towns and villages at the bedsides of their own patients. Until the majority of dais have been taught, at any rate the elements of modern methods, a larger and more highly-paid staff will be necessary for this work than will be needed permanently for the work of supervising enrolled dais.

* See pages 24-31.

District.

I have worked out the suitable disposition of a staff for one district in the Punjab. In the district of Karnal nine-tenths of the population live in villages and this is true nearly of all the other districts of the Punjab.

From the Headquarters of the district should work the District Medical Superintendent of Dais (D. M. S. D.). She must be a fully qualified doctor and may be one of a staff of at least two such in charge of the District Zenana Hospital be that hospital a local fund or mission one. All this doctor's time should be free to spend on administering the maternity work of the district also if possible, the work of the Health Visitors. She might also be a Medical Inspectress of girls' schools in the district.

The reason why she should be accounted as one of the staff of the local hospital is because I consider both doctors will profit by the companionship of each other also the District Medical Superintendent of dais will keep up her practical knowledge by occasionally practising in the hospital when at headquarters.

Tehsil.

In each of the four Tehsils in the Karnal district there should be a Head Midwife. She should be a fully trained nurse and midwife, European or Anglo-Indian, acquainted with the language and customs of the people and in sympathy with them. Women released at the end of the war from nursing and other V. A. D. work should get a midwifery certificate and take up this work.

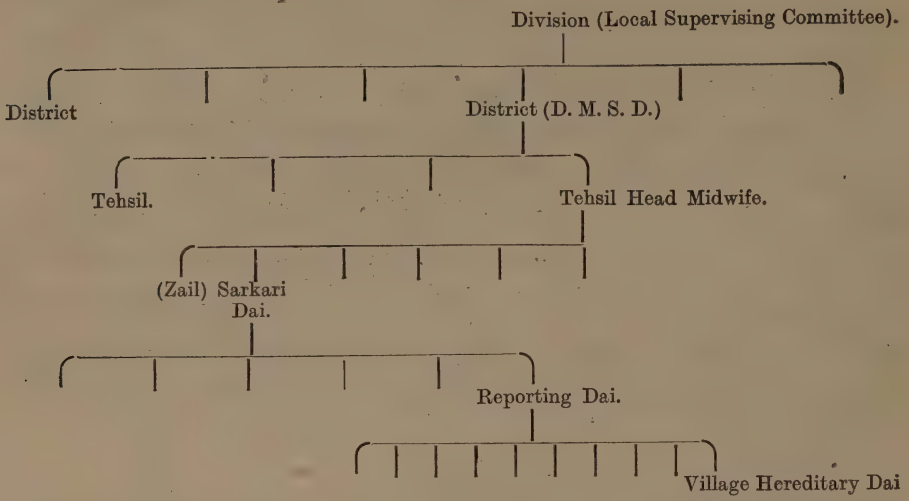
Zails.

There should be trained Sarkari dais under the Head Midwife from 4 to 6 in each Tehsil, each being responsible for her group of villages and their Hereditary or village dais. Sarkari dais at first would be drawn from other classes than the indigenous dais and must be, if possible literate and possess a certificate of two years' training in midwifery.

Village.

There is roughly one hereditary dai to each 1,000 of population, one out of every ten hereditary village dais should be nominated by the Lambardars or headmen of the villages and appointed as Reporting dai of that village or group of villages; these women at first would probably be untrained but they would be the first to be trained. It will be the duty of these reporting dais to visit their supervising dai thrice a week to report the cases of the ten hereditary dais for whom they are responsible in the same way that the village Chowkidar has to visit the nearest Police Thana every few days to make his report on the peace, etc., of the village. At each of her tri-weekly visits to the supervising dai the reporting dai will get a simple lesson in midwifery and

she may eventually be given a stipend to attend the Divisional Dais School. The appended table shows the different grades and their inter-relations :—



III.—Details of work.

D. M. S. D.

The District Medical Superintendent of Dais should visit each town in her district once a month, to inspect the work of the sub-assistant surgeon or Head Midwife and Sarkari dais of that town ; she can at the same time inspect the Health Visitor's work, and girls' schools when necessary and give a popular lecture to women on some subject connected with domestic hygiene or disease.

Head Midwife.

The Head Midwife in each Tehsil must visit one sub-division of her Tehsil each week, covering the whole Tehsil once a month. She could stay at the government rest house if no quarters were suitable at the local dispensary.

Monday, Tuesday and Wednesday she would be visited by her Sarkari dais in that portion of her Tehsil who would each bring their reporting dais, who would receive instruction in some simple matter connected with maternity work, the Sarkari dai being instructed to get that particular piece of knowledge into the dais' heads before the next visit. Dais' outfits, the accouchement outfits, etc., would be examined and replenished and reports of cases taken.

Thursday and Friday the Head Midwife would visit herself any dais failing to report or any case reported to be not doing well. She would try and get the women together in one of the bigger villages and teach them the elements of domestic hygiene. Saturday would be taken up in travelling to the next sub-division of the Tehsil where a similar programme would be carried out and so on.

One week end in each month would be spent at headquarters reporting to the District Medical Superintendent of Dais ; thus every month the head midwife would come in contact with her dais and her doctor.

Sarkari Dais.

At centres at which the Sarkari dais live and from which the Head Midwives work advantage should be taken of the existing dispensaries of all kinds in the district civil, mission, railway, canal, etc. (there are 12 in Karnal district), To these places the reporting dais must get into the habit of proceeding with their reports as chowkidars to their Thanas. Where the dai would have to walk more than ten miles to the nearest dispensary another centre must be chosen, some big village important enough to have a post office, where quarters could be procured for the Sarkari dai ; the Head Midwife could stay in the nearest rest house as she would be a person entitled to the use of Government Rest Houses.

Towns.

For details of similar work in towns the population should be divided into 10,000 for each of which there will probably be about 10 hereditary dais. The Reporting Dai necessary in villages may be left out and a Sarkari or trained dai be appointed to each town whose population is 10,000, in Karnal district there are four such, Karnal, Panipat, Shahabad, Kaithal ; in Panipat where the population is over 25,000 I should advise appointing a second Sarkari Dai.

These dais should work in connection with existing hospitals. If there is a woman doctor reporting to her not less than twice weekly and this doctor should visit cases reported as not doing well in any way. If there is no woman doctor a midwife should be appointed and the report made to her and the District Medical Superintendent of Dais on her visit once a month.

A Sarkari dai must do her best to teach the hereditary dais. In the first instance rewards offered for calling her will be necessary, those most often availing themselves of her services and showing themselves most intelligent might be offered the scholarships available for training at the Divisional Training Schools. After which training those who proved efficient could be graded as Sarkari Dais and paid accordingly, if less efficient, as reporting dais in village districts.

IV.—Outfits.

We come next to the question of outfits which is a very important one. Sarkari dais are trained and work more as teachers and consultant dais ; these should be provided each with a box containing everything necessary for a normal confinement ; it should also contain a douche can and nozzle (preferably glass or brass which can be easily boiled), a catheter, a thermometer and bottles of Lysol or its equivalent, Ergot, some quinine and a few simple

remedies for use in the villages such as eye drops antiseptic dusting powder for the babies' cords, etc.

A box similar to that provided at the local dispensaries in the Punjab would meet the case. A list of contents is appended :—

1 Douche can and tube.
1 Nozzle.
1 Catheter.
1 Thermometer.
1 Pair Dressing Scissors.
1 Pair forceps.
2 Bowls.
1 Apron.
1 Sheet.
2 Dusters.
1 Bag for swabs.
1 Small tin sterilizer.
4 phials with measure—
Ergot.
Lysol.
Boric Lotion.
Ligature for cord.
Soap box and soap.

Accouchement Packets.

The Sarkari dais should also be supplied with a number of accouchement packets for giving out to Reporting Dais for the use of patients who can afford them. A number of these packets should be paid for annually by a local maternity charity for the use of poor patients. In these should be absorbent pads and other articles necessary for the cleanly practice of midwifery, the medical store depôt should be instructed to make and store these packets, sterilized and ready for use, to be opened only at the patients' house at the time of confinement. The price should be kept as low as possible, probably Re. 1 to Rs. 5 according to the number of articles contained. Contents of these packets and the materials of which they are made must be determined by practice. The essentials I consider to be as follows :—

(*a*) One large square absorbent pad (sterilized).
(*b*) Two bundles of swabs done up separately ; one packet to be opened and used at the time of confinement and the other containing small bundles of a couple in each to be used in 3 or 4 days afterwards.
(*c*) Some little bits of gauze to wipe the baby's eyes.
(*d*) Some small squares of clean rags to be used as a dressing for the umbilical cord, the squares to be folded and the centre burnt out by the dai before application, to fix this a small binder may also be included.
(*e*) Thread for tying the cord, bazar *sut* will do twisted and sterilized.
(*f*) Packets of half a dozen pads.

Everything to be burnt after use.

Packets could contain more of certain articles according to prices, also a sheet of waterproof paper, binders for the mother, etc., etc.

Indigenous dais should all be instructed in the use of these packets, for I should not propose to furnish these ignorant women with any other outfit, as I consider if these women can be induced to use these articles intelligently, to wash their hands thoroughly before touching the patient, also before use, to

thrust the blades of the instrument with which they cut the cord, into the fire while they count 10, 99 per cent. of the women and infants attended by them stand a fairly good chance of remaining uninfected by septic organisms.

V.—Help of Government.

Before inaugurating any systematic work of teaching and handling Indigenous dais it will be necessary to use a certain amount of moral force, together with, in most cases bribes and other inducements and for government to countenance and give weight to these schemes of inducement, as nothing whatever will be done if the question of training is left to these women's own wishes. They must be ordered to attend classes and to call the Sarkari dai, their names must all be registered, those disobeying orders must be warned and punished. I know by bitter experience the futility of trying to get hold of these women by offering rewards only.

If the Deputy Commissioners, Tehsildars and other influential officials give an order that dais are to be trained and supervised, in most cases the order will be obeyed and if a sympathetic woman is put in charge of the work it will succeed. A very great importance naturally attaches to the personality of the Deputy Commissioners and Honorary Magistrates also of course to that of the women employed. Dais should be rewarded on the spot for attending classes, rewards for calling for assistance should be given at the class in the presence of all the others, the reasons for the reward being explained or *vice versâ* the reasons for a fine, why inflicted, what should have been done, etc.

VI.—Finance.

We come lastly to the all important question of finance. How is the expense of a scheme such as the above to be met ? This is a matter deserving marked attention from a paternal Government.

(1) The cost of the Divisional Dais Schools should be met partly from Local Funds and partly from Provincial revenues.

(2) In each district the District Medical Superintendent of Dais should receive a salary of not less than Rs. 500 per mensem with the usual travelling allowances.

(3) Head Midwives (four) should each be paid Rs. 150 per mensem *plus* fixed travelling allowance say Rs. 50 per mensem.

(4) Twenty Sarkari dais at Rs. 20 per mensem at least.

(5) Ninety reporting dais at Rs. 3 per mensem.

giving a total of about Rs. 2,000 per mensem or Rs. 24,000 per annum allowing for contingencies Rs. 25,000 per annum. The salaries of the Reporting Dais should, I think, be paid out of the village " cess " similarly to that of the Chowkidars. Sarkari dais together with their outfits should be paid by local funds.

The salaries of the head midwives and of the District Superintendents of dais might possibly be met wholly or in part by the funds at the disposal of the Central Committee of the Countess of Dufferin's Fund and the Victoria Memorial Scholarships Fund if great efforts were made to increase these funds. But I am strongly of opinion that the time has come when the provision of medical aid to women and allied work such as the improvement of the conditions of child-birth and measures to lower the infant mortality should no longer be left to charitable institutions and funds such as the Countess of Dufferin's Fund, but should be considered to be matters affecting the State and as such, at any rate of equal importance with public instruction, and be met by taxation and paid out of provincial revenues.

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This is a subject touching all classes and castes of Indians—the facts if made public would horrify all civilized people. The barbarities practised in Indian homes at the time of confinement are dependent on no religious precept or sanction, in fact most of them are directly contrary both to the spirit of Hinduism and that of Mohamedanism, and the enormous infant mortality in this country is directly due to these corrupt practices. Many women who are childless and permanently disabled are so from the mal-treatment received during parturition, many men are without male issue because the child has been killed by ignorance when born, or their wives so mangled by the midwives they are incapable of further child bearing.

These things are directly due to the ignorance of the women, and to the fact that the men although educated on western methods have never received any instruction on these vital subjects—subjects which mean the death or the life of the race. Elementary ideas on hygiene and personal cleanliness are instilled at an early age in English homes, in India the home too often knows nothing of these things, and the school curriculum which should begin here is busy with other subjects.

And when we have the spectacle of even educated Indians with English degrees allowing their wives and children to be killed off like flies by ignorant midwives, we can faintly imagine the sufferings of their humbler sisters.

The Englishmen and Englishwomen who would help are also ignorant of what goes on in Indian homes during child-birth, and an application of European methods to Indian conditions which are totally different is bound to fail.

For this reason I preface my remarks with a few cases typical of the sort of thing every medical woman practising in this country encounters.

A summons comes, and we are told a woman is in labour. On arrival at the house we are taken into a small dark and dirty room, often with no window. If there is one it is stopped up. Puerperal fever is supposed to be

* Prize paper.

caused by fresh air. The remaining air is vitiated by the presence of a charcoal fire burning in a pan, and on a charpoy or on the floor is the woman. With her are one or two dirty old women. Their clothes filthy, their hands begrimed with dirt, their heads alive with vermin. They explain that they are midwives, that the patient has been in labour three days, and they cannot get the child out. They are rubbing their hands on the floor previous to making another effort.

On inspection we find the vulva swollen and torn, they tell us yes, it was a bad case and they have had to use both feet and hands in their efforts to deliver her. The patient is weak and collapsed, her temperature is 103 and her pulse 120. No time is to be lost. We find she has passed no urine for hours past and not had her bowels open for days. These things are attended to, then chloroform is given and the child extracted with forceps. We are sure to find holly hock roots which have been pushed inside the mother, sometimes string and a dirty rag containing quince seeds in the uterus itself.

Of course the child is dead and the mother's sufferings are not yet over. How can she escape blood poisoning ? She does not, and if at home probably dies soon after delivery or recovers, permanently injured.

If she comes to hospital we can often save even a desperate case like this, by continual washing out of the uterus, and by dressing the wounds caused by the dais' hands and feet, usually in such a case large foul smelling sloughs come away if the parts are kept clean.

Case 2.—A woman arrives at hospital carried on a string bed. She has been six days in labour and is now at the point of death.

The bones of the pelvis are so deformed it is impossible not only to extract a living child but even a dead one when cut up into pieces will not pass through, and yet for six days this wretched creature has been kept without food, thumped and kneaded and rubbed internally with mustard oil by these dais who have done everything known to them without avail.

On this case Caesarian section was performed, the uterus was found green with decomposition and gas burst from it when opened. The child dead, decomposed and stinking was got out.

The patient was sewn up and strange to relate lived seven days. She never had a temperature or sign of peritonitis, but died as so many do from shock and exhaustion, consequent on the treatment she had received. Picture to yourself the agony of those previous six days.

Do not think it is the poor only who suffer like this. I can show you the homes of many Indian men with University degrees whose wives are confined on filthy rags and attended by these Bazaar dais because it is the custom and the course for the B. A. degree does not include a little common sense which might be useful in the ordinary affairs of life.

Case 3.—A wealthy Hindu, a graduate of an Indian University and a lecturer himself, a man who is highly educated, calls us to his house as his wife has been delivered of a child and has fever.

The dai who delivered her is actually one trained under the auspices of the Dufferin Fund, and worked well under supervision in the zenana hospital.

On enquiry we find she washed her hands before examining the case, but had no disinfectants as they would have cost her about Rs. 3 and the fee she will get at the case is only Re. 1 and a few dirty clothes.

The patient is lying on a heap of cast off and dirty clothes, an old waistcoat, an English railway rug, a piece of waterproof packing from a parcel, half a stained and dirty shirt of her husband's. There are no sheets or clean rags of any kind. As her husband tells me 'we shall give her clean things on the fifth day, but not now, that is our custom.'

That woman in spite of all we could do died of septicæmia contracted either from the dirty clothing which is saved from one confinement in the family to another, or from the dai who did her best in the absence of either hot water, soap, nailbrush or disinfectants.

Case 4 illustrates what training will sometimes do.

A woman in her eighth month of pregnancy is seen and examined by one of our dais in connection with the hospital which supplies her with nailbrush, soap and disinfectants. She told the woman she was too deformed to have a child without the doctor's help and must come to the hospital for the event and not allow the Bazaar dais to examine her.

She had lost several children previously and so in spite of strenuous opposition from friends the woman did so and now has a fine healthy infant delivered by Cæsarian section, from which she recovered normally.

Case 5, showing how life and death are often dependent on the judgment of the next male relation.

A woman was brought in in a dying condition, so deformed that the child could only have been delivered by Cæsarian section. It was already dead. We explained this and told the people she would die if nothing was done and proposed immediate operation to save her life. They told us her husband was away but they would ask leave from the nearest male relative. This proved to be a boy of twelve or thirteen and he, ignorant and frightened, refused his consent—so the poor woman was carried the long journey back to die at home, although she herself was willing and anxious to have the operation.

Now what is the remedy for all this suffering, ignorance and loss of life ?

Many things have been proposed and tried, such as enlisting the sympathies of English women, inviting purdah ladies to lectures, training the dais, all good in their way, but I am convinced the one essential point has been overlooked. In England women can and do manage their own affairs and those of other people too, intelligently, efficiently and well. Without them where would be our Educational system, our hospitals, our orphanages and a thousand other activities essential to the welfare of a great nation. Out here not only are the women not educated, but they have no power to reform things. Like most uneducated people they represent the conservative side and any influence and power they possess is thrown into the scale on the side of custom and

against change and progress. We are told again and again of the influence of the mother-in-law, of her authority in the household, but experience tells one it is a dead weight influence, a dragging back of the wheels of progress and enlightenment. For this reason so many educated Indians will not live with their parents, all they learn of advancement and progress cannot be practised under the paternal roof where lives grandmother and great grandmother and great great grandmother all desperately fighting against change.

The women themselves are their own greatest enemies, and if any one can devise a system of education and enlightenment for grandmother, great grandmother and great great grandmother which will persuade them not to employ the ignorant dirty Bazaar dai they will deserve well of the Indian nation. In my opinion that is an impossible task.

The important point which has been overlooked in all schemes up to the present time is the men. Get at the men, teach the men the essential points of safe childbearing—the danger of employing the untrained bazaar dai—the unnecessary sufferings their women undergo, the loss of infant lives which are the true wealth of a nation, and the life saving movement would go forward and sweep opposition and custom away.

Indian men have so often said "If only we knew what *should be* done we could prevent this but we are ignorant and so leave it all to the women themselves."

Place the subject on its proper basis, the love of the race, the preservation of life and there will be a ready response.

A meeting was recently held here for men only to tell them something of what their wives suffered and to ask them to help. Four hundred came at a few days' notice and a league is being formed among them to bind themselves to help the women and to study the subject.

All women doctors out here find that in an Indian home they cannot get hot water, clean clothes and a ventilated room for the expectant mother except by talking to the *men* of the family, the women are ignorant and have no power to provide things of themselves.

Then Indian children, both boys and girls, who are conversant with these natural facts at an early age, and in many households are allowed to witness their mother's sufferings, should be taught at school that extreme cleanliness and good ventilation is necessary at such a time.

Any health primer intended for schools in India is inadequate that does not go into the question of early marriage and its evils, and does not include in its teaching the importance of sanitary conditions during child-birth.

We cannot get at the girls at all except during their all too brief years at school. They are removed at 12 or 13 to be married and become mothers without having received one word of instruction as to the care of their own health and that of their children.

If they spent their time learning simple rules of health and cleanliness their time would be well spent and they would be a blessing to their house

holds, instead of which the whole subject of marriage and children and the sanitation of the home is avoided, and their backward influence keeps the men from putting in practice what they have learned at their schools and colleges.

The preservation of the race, the welfare of mother and offspring should come before the teaching of reading, writing and arithmetic; the former touches each one's life—the latter may not even be useful in the primitive conditions in which many live in India.

I would suggest that St. John's Ambulance Association which has done so much in the past to alleviate human suffering be approached to include in their activities a midwifery course "First Aid in Midwifery" and a simple manual be prepared on the subject.

The course would be most popular especially among Indians, and one feels sure that Englishwomen who have the welfare of all women in the Empire at heart would welcome such an opportunity of further knowledge and service. So many Englishmen and women do valuable work on Dufferin Committees throughout India—but we sometimes feel a little more special knowledge of the conditions to be dealt with and the ideals aimed at would double their usefulness to the women who suffer so much, so patiently, and so willingly.

These women are bravely doing their duty by their sons. Are their sons doing anything in return?

Lastly we come to the training of midwives. Formerly we took for granted that if we trained midwives in India, every one would be pleased and anxious to employ them, as the English poor are to employ the trained parish nurse, but it is not so. It is a sad fact that there is *hardly any demand* for them. Rich people are willing to get them for four annas instead of the Bazaar dai at a rupee, but there it stops. No demand—and the demand must come before the supply. Then a woman will find it *pays* to be trained, now it does not, no one asks if a dai is trained.

In India any woman can practise as a midwife and any family will gladly employ her, so why train?

Training is useless without a supply of antiseptics, soap and nailbrush at cheap rates. These things are too costly for the dai to purchase herself. This is an essential point universally overlooked. We train midwives but no municipality we are acquainted with provides the necessary outfit to carry out what they have learnt.

Dais should be registered and their names posted in some public place so that those wishing to employ them can readily obtain their services.

Their work must also be registered and inspected by responsible trained workers and rewards should be given for the best records of successful work during the year.

In every district there should be a training school for midwives and a hospital where cases beyond their capabilities can be dealt with.

The system inaugurated by St. Catherine's Hospital, Amritsar, of training, and of inspection accompanied by rewards and fines is excellent and has shown results unequalled in other parts of India.

To sum up. In order to improve the conditions of child-birth in India the *first* step should be to make the knowledge of these awful conditions which now prevail public property.

The facts must be placed before all classes thus creating public interest in the subject, laying especial stress on the national importance of the problem. The men especially must be approached.

Secondly.—The remedy should be pointed out. An acquaintance with the hygienic requirements of child-birth and instructions for carrying them out should be accessible to all by means of lectures and a short primer on the subject.

All schools should include instruction on this and kindred subjects such as the evils of early marriage in their curriculum.

Thirdly, the demand having been created, the trained and certificated midwife we trust will then be ready for employment. These must be trained, registered and inspected, and supplied with necessary appliances to be really efficient.

CHAPTER V.—PAPERS CONTINUED. Drs. McMICHAEL, LEWIS, LEACH, STUART.

AGNES M. McMICHAEL, M.B., Ch.B., *Women's Mission Hospital, U. F. Ch. of Scotland Mission, Ajmer, Rajputana.*

It does not require a very intimate knowledge of home life in India to realise how much requires to be done if the conditions of child-birth in this land are to be improved. Though the machinery be set in motion soon, improvements can come only slowly for it will demand constant, patient work to overcome the superstition and ignorance and indifference that are responsible for present conditions.

In such a vast land as India, with its scattered village population, the main maternity work will always lie in the hands of native midwives. Only in larger centres, and these are proportionately few, can hospitals or dispensaries be established or qualified medical aid be obtainable. Therefore all improvements must aim—

(*i*) At the education of the general public in the present causes of the terrible mortality amongst mothers and children and on their own responsibility in the matter. For until every member of a household, men as well as women, is convinced of the absolute necessity of fresh air and cleanliness during confinement and understands the simple laws of domestic hygiene the good midwife will have a difficult and almost impossible task.

(*ii*) At the proper education of midwives that they may be ready to meet the new demands made on them and able where necessary to educate their patients.

Let us turn to the first aim, *viz.*:—The education of the general public.

(*a*) This may be done through simple lectures being given in all girls' schools and in Zenana teaching. It is not sufficient that sanitary primers should form part of the Government school curriculum. Only a very small portion of women and girls are sufficiently advanced to study these intelligently. All effort should be made to teach by pictures and simple talks. The need of absolute cleanliness and fresh air in the homes cannot be too often emphasised. Much could be done by women sanitary inspectors visiting the various schools for this purpose.

(*b*) Through Purdah Nashin clubs the older and more influential and probably more intelligent class of women may be

reached and where such clubs are not established or where they comprise only a very small proportion of the women of the place it is always possible, though perhaps not without much effort, to gather some of the women for lectures or simple talks. Something on the lines of the Mothers' Lectures which have been held in Ajmer for the past two years might be found suitable. Four lectures are given during the cold weather on the following subjects:—

(*i*) The care of the mother before confinement and the necessary preparations for confinement.

(*ii*) Care of the young child.

(*iii*) Simple ailments of childhood—their prevention and treatment.

(*iv*) The training of the child.

Any mother attending three of these four lectures is entitled to enter her child for the Baby Show open to all babies under 2 years. Here numerous prizes are given in the different classes not only for the healthiest, cleanest baby but to the mothers who have well and carefully tended a sickly child. It has been encouraging to notice the increased attention during the 2nd year of lectures and the practical application of certain points such as the whitewashing and thorough cleaning of the lying-in-room before confinement.

(*c*) In the education of the boys and men advantage can be taken of the present machinery already at work in connection with the Anti-Tuberculosis League. By giving these Leagues wherever formed every support and by forming them where none exist at present not only tuberculosis but puerperal fever and its attendant ills would be overcome and the labour and expense of a double organisation be spared.

(*d*) The whole question of the housing problem in Indian cities and the destruction of old and insanitary dwellings must not be overlooked and where necessary municipalities and other public bodies should be urged to do their utmost to improve lands under their charge. Here again the Anti-Tuberculosis League is already at work in many centres.

(*e*) In America at present the U. S. Department of Labour, Children's Bureau, has issued a "Care of Children's Series," No. 1 being "Pre-natal Care." These books are distributed free and are in great demand by all sections of the community. Some such simple book suitable to Indian needs could easily be drawn up in vernacular as well as

English. Were these readily obtainable for free distribution say by Government and mission hospitals, recognised dispensaries and qualified practitioners, they would do much towards educating the general public. There is a genuine desire in many a lay person's mind to alleviate the present suffering of mothers and children, and hundreds would gladly avail themselves of these books.

We would suggest—

(*i*) That a simple scheme of lectures to women on "The Care of the Mother and Child" be drawn up in skeleton form, that this be well advertised, and that all in touch with purdahnashin clubs or any who can gather together a few interested women be urged to make use of these lectures and to report progress.

(*ii*) That some suitable scheme of lectures on domestic hygiene with pictures, posters and lantern slides be adopted for school girls, and that these lectures be delivered in the various schools and centres at least twice a year.

(*iii*) That in boys' schools and colleges and in lectures to men advantage be taken wherever possible of anti-tuberculosis schemes.

(*iv*) That some simple book on "Ante-Natal Care" be drawn up and distributed.

Next to be considered is the education of the native midwife. To tackle the training of the present "dais" in a thorough and scientific manner requires more time than is usually at the disposal of the average doctor in India. The question must be seriously considered by those who have had experience in this branch whether special doctors should not be appointed to superintend this work. Dr. Agnes Henderson's class for dais in Nagpur shows what can be done in this direction. Here there are over 80 dais on the roll. These dais are paid for their cases according to fixed rule.* Such an arrangement seems not only necessary but wise for the midwife's calling is notoriously badly paid and the work hard and exacting, and better pay should make for better work. The dais meet each week to report on their cases when a short simple lecture is given.

To make such work possible there is still a great deal of opposition to be overcome amongst the dais themselves. A little encouragement

* (1) Each dai is paid 4 annas for every midwifery case inspected and is fined 2 annas if mother or baby dies.
(2) Where the help either of inspector or doctor is called for 8 annas is paid.
(3) Where patient is brought to hospital the dai receives Re. 1.

and praise to the dai when one has been called early to an abnormal case or when one sees the case has been conducted well and in a cleanly fashion goes far to cementing friendship, and any hints or explanations on that particular case are usually well received. The financing of this work would probably come under the Victoria Memorial Scholarships Fund.

As regards the training of the future midwife it should be the aim of every hospital where nurses are trained to give each girl a midwifery as well as general training, and this training must be thorough and practical if it is to be any use at all. It is not sufficient that a certain number of cases should be seen; each candidate should conduct at least nine of these cases *herself*. For only by having full responsibility will she gain a thorough knowledge of her work.

Where a girl is unable (perhaps through lack of education) to take a full training in nursing it may be possible for her to take her midwifery training in a regular hospital. During this time she will unconsciously absorb hospital methods and be better fitted for midwifery work.

One of the greatest needs at present is the establishing of scholarships in all training centres for prospective midwives. Many are widows seeking a means of livelihood, and the great majority have no funds to support them during their training and thus turn to other work.

Another great disadvantage is that even after training the work is irregular, exacting and badly paid. Supplementing the midwife's pay from Government (Municipality), as is at present under consideration in England, will be necessary if the better and more educated women are to be attracted to this work.

At present the dai's equipment for her work is notoriously scanty consisting usually of a pair of dirty hands, some oil or ashes and the vegetable knife. Even the certificated midwife comes short of the mark here. To remedy this each dai under supervision and each candidate on gaining her certificate might be given (or might buy at nominal cost) a simple midwife's outfit—say—carbolic soap, nail-brush, scissors, ties for the cord, a bag of "rui" or tow and a small bottle of lysol or its equivalent. This could very easily be fitted up in a simply made tin box from the bazaar and renewed from time to time. A supply of accouchement outfits for the mother is under consideration at present, we believe.

Constant supervision will be required in any work amongst the dais as the "aseptic conscience" soon slumbers in an Indian bazaar, and a more uniform organisation than at present is necessary if rapid progress is to be made.

We would suggest—

(*i*) That effort be made to link up the present schemes, Government, mission and individual for work amongst present dais.

(*ii*) That the same rules for granting a midwife's certificate should hold in every training centre, and these should insist on the candidate having conducted a certain number of cases herself. Suggestions should be invited for the drawing up of these rules from all training centres, and all these centres should be urged to enter their candidates for this examination.

(*iii*) A sufficient number of inspectors should be appointed to visit the various training schools to see that the desired standard is maintained. (Half-time inspectors might be appointed say in the cold weather when indoor hospital work is usually at a minimum.)

The initial outlay of all the schemes would be great, but the ultimate saving will be greater, for anti-natal and maternal care makes for a stronger, healthier nation.

Dr. E. G. Lewis, M.D., *B. S. American Presbyterian Mission, Ferozepur.*

What do we want for the mothers of India? This is the ideal, well equipped hospitals in every city and village, proportionate in number and size to the population, numerous clinical centres where prospective mothers would go for pre-natal examination, and instruction, and mothers with babies go for weekly weighings and instruction in care of infants, milk depôts where pure, raw, bottle milk could be obtained at low prices, Mother's Clubs where women could be taught cleanliness and the principles of personal hygiene, classes for dais in the hospital, no untrained dais allowed and the dais holding certificates, really worthy. First and foremost, all these things popular with the women, hospitals and dispensaries crowded and everybody eager to give up old habits and take up new.

What have we? Well, we have Hospitals but they are not very popular. The women do not like to go unless they are *in extremis*. Also, very few are well equipped. We have Dispensaries and many women go, but at present no dispensary is keeping watch of its pregnant women with an eye to avoiding abnormal labours. We have dais, most are untrained, some are poorly trained, a few are well trained. Have we a cow? Yes, but who feeds their infants with raw milk in India? Moreover the women are satisfied with what they have. They like the dirtiest dais, and they are afraid of hospitals and dispensaries and Doctor Miss Sahibs who want to clean them up. Hence the yearly harvest of Puerperal Fever, Pelvic Inflammation, Salpingitis, and dead babies. We have

cleanliness and good health for the mothers and infants of India. How can we deliver the goods?

It is the same kind of a problem which faced the Singer Sewing Machine Company some years ago, and to-day you meet a Singer every time you meet a *darzi*. By some means or other the Singer became popular. Now how can we make cleanliness and good sense popular? The principle to work on is this, publicity, the creation of a want, the delivery of the goods.

"The man who whispers down a well,
About the goods he has to sell,
Will never reap the shining dollars,
Like the man who climbs a tree and hollers."

Now I think it is time the medical profession hollered long and loudly, about the evil conditions of child-birth, so loudly that the noise of it will reach the women in the Zenanas and their husbands on the bench. This publicity campaign can be done by printed matter, by graphic pictures, by Zenana talks, by school instruction. We need in every city a woman whom we may call a Mother's Secretary. She may be English, Anglo-Indian or Indian, but she must know the talk of the women and be able to meet their husbands too. She must be bright, active and capable of getting other people to work, but not necessarily a Physician. This Mother's Secretary must start the publicity campaign and she should begin with the "Higher ups" and the Municipality. We could have a Mother's Day and sell tags at 1 or 2 annas a piece to raise money for Hospital equipment. These tags might have a baby's picture on them and tell briefly what the money is to be used for. The tags will penetrate the Zenanas and *bastis* and *gullies* of the city. Besides this the Mother's Secretary should form Mother's Clubs. These Clubs will necessarily be small at first. But there are many intelligent and wealthy Hindu and Mohommedan women who could be taught to think about the "other fellow" and the "other fellow's baby." In these Clubs could be given illustrated lectures on Child-birth, Hygiene and Care of Infants. The Mother's Secretary should also start something in the Hospitals. In the Women's Ward various *tamashas* could be given. These people are easily entertained and if there is a free joyous atmosphere in the Hospital and the people get used to going to them for a good time, it will be less of an ordeal to go when they are sick. Then literature can be distributed and the ultimate purpose of the Hospital explained. Most important of all the Mother's Secretary must make the women feel that the Hospitals belong to them. The Mother's Clubs could support certain wards. The Mother's Clubs could make binders and pads and diapers and give old rags to be boiled and kept ready for use. They could be taught to make little *kurtas* for the infants. The Hindu women, the Mahommedan women and the *Dev* and *Arya*

Samajh women could have separate wards in which they could take personal pride. The Mother's Secretary would also keep in touch with the dais. Her main task at first would be to gain their friendship and co-operation. The poor dais must be weeded out and other means of support found for them. The good dais must be helped to higher wages so that cleanliness may be considered a valuable asset. The work now being carried on among the dais is good and should be pushed, but as long as the women are confined in dirty dark mud rooms with only dirty rags about no dai can be clean, no matter how much training she has had.

A certificated dai should be allowed to bring a patient into the Hospital, confine her, collect her usual fee from the patient, and a small reward from the Hospital. Then if the case is abnormal the Doctor in charge can give help but the fee of the dai should not be cut.

For those patients who will not come to Hospital, the dais should make pre-natal visits, and see that the room in which the patient is to be confined is the best the place affords, she should take rags from the patients, boil them, dry in the hot sun and store in such a way that they will remain clean and ready for use.

I believe that the most necessary thing is adequate supervision and competent leaders. Then the women will follow. The few Doctor Miss Sahibs have too much to do already but with a Mother's Secretary to do the pushing and the visiting in each city a few years will show a great increase for the better in the conditions of child-birth in India.

Dr. F. B. Leach, m.d., *Women's Medical Service, Dufferin Hospital, Cawnpore.*

In an attempt to discuss ways and means of improving the conditions of child-birth in Indian homes we must also consider the methods requisite to the prevention of infant mortality, as the two are interdependent and what tends to improve one must necessarily influence the other.

I am of opinion that if we are able to develop a scheme applicable to both we will have attained much in solving a problem which rightly causes Government much thought and anxiety in spite of all that is being done to improve the general conditions attending child-birth in India. The very best of expert opinions and experience has been gathered to elucidate the causes of the high rate of infant mortality, and various schemes have been set afloat and methods adopted with very little, if any, pronounced success.

In taking up the Sanitary Commissioner's report we find the death rate given therein is absolutely appalling. I do not intend to quote details of figures or reports of the numerous opinions and theories put forward on the matter. My statements will be based chiefly on some of

the underlying vital facts which in my opinion bring about the high death rate amounting certainly to 80 per cent.

Those of us who have had any practice in the zenanas and homes of the average Indian realize to our cost how very difficult it is to carry out any definite proposed line of treatment. This is one reason why our endeavours must be directed towards devising a feasible scheme which will enable us to put into practice our theories. To bring this about we must take into consideration the causes which influence Indians in their habits which are the basis of the mortality rate referred to above. Briefly summarised these causes are:—

1. Ignorance—The result of lack of education.
2. Hereditary tendencies.
3. Caste prejudices.
4. Unhygienic environment.
5. Lack of skilled aid.
6. Adherence to old established customs.

All these points influence more or less the conditions of both infant mortality and the confinement of women. These may appear seemingly insignificant but they should be recognised as bearing a vital part on the subject under consideration.

Bearing these in mind I venture to put forward the following suggestions:—

1. That pamphlets in the vernacular with the principal points showing the causes of the high death rate of women in child-birth, and the remedies to combat this evil be distributed free of charge to every home in the city in the hope that educated men (one of whom will surely be found in every home) will read, and no doubt bear in mind, the contents, and perhaps teach them to their women folk.
2. That a modified version of the same pamphlet be introduced through the Educational Department and Mission Agencies into all Indian Girls' Schools and homes. These, if read and taught, must eventually effect the course and methods of Indian living. The pamphlet in question should be somewhat after the style of the well known book in English entitled "What a Young Girl ought to know" or "What a Young Woman ought to know" by Mrs. Mary Wood, M.D., and Mrs. Emma E. A. Drake, M.D.

The girls in our schools are generally married between the ages of 12 and 14, and 9 cases out of 10 will be mothers within a year of their marriage. They should therefore be taught early, while still in school, the necessity and importance of clean and healthy living and of infant

feeding and care, and as a result of this sort of learning the more enlightened mind will naturally turn to the facilities offered to the public by means of modern medical treatment. Thus it surely will not be long (certainly within a decade) before the public will discern the difference between a lady doctor, a qualified nurse and a trained Victoria Memorial dai.

3. *Training of Dais.*—Towards this point even the Government is directing attention. I understand that a scheme is under consideration in the Educational Department for providing scholarships to the daughters of indigenous dais to attend a recognised school in the hope that after school days these girls may adopt the profession of their mothers after a *proper* training. If candidates for training as dais have received a school education they will naturally be intellectually brighter than illiterate women and the output of trained dais will eventually be of a better type than a great many of the present day.

I am not in favour of training ignorant bazar dais. She is too wedded to her own methods and superstitious views to alter them, and in spite of all one may do or say to prove to her that her methods are faulty she will nevertheless adhere tenaciously to them and the little knowledge she may gain in training becomes a source of greater danger to her as she believes she knows all there is to learn in regard to midwifery and attempts to conduct more complicated cases than she might otherwise have dared to undertake with sure disastrous results to her patient. But the daughters of such dais if trained by the help of the education and training referred to above will probably prove a valuable factor in future schemes for the prevention of death in child-birth.

The Victoria Memorial dai scheme is a very good one, but it can be abused and brought into disrepute. Our great hope is in a *thorough* training of these dais. After they are approved of they will be able to go in and out among the different classes and castes of Indians where at present no lady doctor or qualified nurse can get admittance unless under very exceptional circumstances.

It should be our policy then to train and endeavour to retain the services of these qualified women, and not allow them to go away and practise as they please, as they soon get into trouble, deteriorate and in many cases demand extravagant fees on the plea that they are qualified, and thus their services are not demanded nor indeed can they be secured by the poorer classes who cannot afford fees. The trained Victoria Memorial dai should be maintained on a salary of Rs. 15 to Rs. 20 per month with free quarters which should be situated in the hospital compound or next door to it, so that they will be constantly under supervision and

control, and kept up to the required standard of efficiency. When not called out to the city to attend obstetric cases they should be required to help in the nursing and care of the hospital indoor patients. They will thus gain experience and confidence by attending cases coming into hospital. We cannot hope to gain any successful results from the bazar dai for reasons mentioned before, but I have every hope that our Victoria Memorial dais will in course of time prove a great success. When they are engaged or obtain a scholarship for training it should be subject to the condition that they sign a bond binding themselves to serve the Dufferin Fund for at least 3 years after obtaining a recognized qualification and during this period of service they should be paid at least Rs. 20 per month with free quarters. Fees for their services should be regulated to suit the financial position of individuals and should vary from annas 4 to Rs. 2 or Rs. 5 per case but should be credited to the funds of the hospital and not paid to the dai herself. If after 3 years these women care to leave to practise independently they may be permitted to do so. By that time younger and less experienced dais who have been under training will have qualified to fill their places and the older outgoing ones will have gained experience and confidence enabling them to work independently. By this method the scheme will be maintained and we doctors will by then have gained sufficient confidence with the public for them to send to us for professional help when necessary.

The Local Committees, Municipal and District Boards might be required to provide the salaries of a certain number of trained dais, but the control of them and of their services should be vested in the lady doctor, and they should in no way be at the beck and call of members of such Boards.

Further I would suggest that a thoroughly reliable and trained nurse who will take an interest in the work should be engaged under the lady doctor and her duty should be to follow up and to report on the progress of each case that the dai has attended. The dais should attend each case for 10 days and see the mother through the peuperium and the child past the days of tetanus infection.

The summarised contents of this paper are:—

1. To teach the Mothers of the future in their schools and in their homes by means of pamphlets.
2. To encourage female education by every possible means.
3. To abolish dirty inefficient dais by substituting for them trained and qualified women who should work under efficient supervision and professional control.

With these few remarks I will close this paper which makes no pretensions to being exhaustive. The opinions and schemes of co-workers on the subject will be read by me with deep interest and I shall be glad to receive further suggestions if such are put forward by other members.

Dr. E. G. Stuart, m.b. (Lond.), *C. E. Z. Mission, Quetta.*

The Training of Dais.

At the root of all the difficulties and dangers that attend child-birth in India are the ignorance and superstition of the community. We cannot put all the trouble down to the indigenous dais, there are the mothers and grandmothers and others of the household to deal with. Therefore in any scheme for improving conditions at the time of the confinement I consider that we must aim first of all at the enlightenment of the Community in general.

First of all comes the education of the children in matters of hygiene and in a certain amount of physiology and we shall see the fruits of this in the next generation. We can already see the difference in homes where Education has made progress.

In the Punjab and United Provinces curricula for girls' schools considerable stress is being laid on the teaching of hygiene, etc., and in the United Provinces "School Leaving Certificate" which can be taken as a final examination in High Schools, there is a course in physiology, first aid and home nursing, in which as much practical work as is possible is to be given.

Secondly, the education of the husbands should be undertaken for they do not realise how much they can do towards improving the conditions for their wives. Lately I was asked to lecture on the care of children before the most advanced Indian Society in Quetta. I was introduced by a thoroughly well educated and anglicized man who in his introductory remarks said that of course this was really a subject which concerned women rather than men, but as I knew there would not be any women present I had prepared my remarks for men, and tried to show them how they could help by improving the hygienic conditions in their own homes and as landlords by keeping their houses in good repair. Not long after I attended the wife of one of my audience and was pleased to find he had paid great attention to the preparation of his house which had been whitewashed and carefully cleaned. He even came after I had gone to bed one night to ask what things to buy in preparation for the event; however I persuaded him to wait till the morning. In another house where I found everything very dirty and where another baby was due shortly, I urged the people to insist on having the house whitewashed, and next time I went I was glad to see that my message to the landlord had resulted in the whole tenement being whitewashed. I had intended reporting the matter to the Sanitary Committee if the place had been left as it was, and with an energetic Indian Sanitary Inspector I knew the matter would have been attended to. This leads up to a third point and that is that women doctors who see much more than any man

can do of the state of the houses and city, can do a good deal by reporting on it to the Municipal authorities. Of course the result will depend on the activity of these authorities, but this should become progressively greater as time goes on and education relaxes the prejudices of the people.

Coming to the actual work and training of daïs I consider that these should be divided into 3 classes:—

First comes the Indian nurse (up to the present chiefly Christian but no doubt gradually Mohammedans and Hindus will be included) who has a full training (generally 3 years) in a Government or Mission hospital and takes her general nursing certificate and also a midwifery certificate in English or in the Vernacular. In the Northern India United Mission Board for nurses, the mission hospitals of Bengal, United Provinces, Rajputana, Punjab, North-West Frontier, Baluchistan can all send up nurses for the examination or for the local government examination such as that held in Lahore—other girls of this class take the compounders examination *plus* midwifery. I think it might be well later on to have one standard examination for the whole of India, with centres in different Provinces but for the present I think the need is met for training this class of nurse—midwife or compounder midwife. The larger number of these girls marry, some stay on and work as headnurses or staff nurses in the hospital, while only a few set up as midwife, but those who are married act as a centre of light in their own neighbourhood and take cases occasionally. It would be well that a register should be kept of all these well trained midwives, for use might be made of them as I shall suggest later under the third heading. Second come the semi-trained nurse-dais. These are trained in the rudiments of nursing, generally for 2 years, and attend regularly at hospital, at the same time learning midwifery; they should provide a most useful class of midwife but much more standardization is required in their training and examination. Up to the present women of all classes have been trained in Dufferin hospitals, chiefly for this work, and have had "Scholarships" given during the period of learning, but there have been no rules that I could obtain as to the standard of teaching or examination. When first I was asked to examine for the Victoria Memorial Fund Certificate I took it for granted that the candidates had been prepared according to the recognised rules but though I asked for a copy of rules I had to proceed without them as they were not forthcoming (later I found they did not exist). Some time after the examination was over I discovered that one woman had only taken one confinement case and others had taken very few, so we made our own rule here in Quetta that each candidate must have conducted 20 cases. I only mention this to show how each place has evidently been a law unto itself.

My experience of this class of nurse midwife suggests that much more care is needed in the selection of such women for training for several of the women I have come across later, in connection with their work in the town, have been utterly untrustworthy in spite of all their training; here it has been a case of money thrown away, the only result being that knowledge has been secured which may be used by unprincipled women in a manner dangerous to the patient. I suppose it may be too much to ask that such women should have a slight knowledge of reading and writing but I think it might be insisted on that simple examinations should be held at intervals during the 2 years course and that if these show that the woman is too stupid to learn she could be relegated to the third class of dai. Further a woman whose character is not trustworthy should not be kept on for the 2 years course; such women if certified as nurse-dais will only throw discredit on the training as I have already shown. I have come across such semi-trained nurse-dais whom I cannot trust any more than the indigenous dais, and this is not the fault of the training but is due to the fact that these women were unsuitable for such training from the beginning.

I think one or two dais of this class should be attached to each hospital and wherever possible they should be planted out in towns or villages where there are no hospitals.

In the third class are the indigenous dais—I think the greatest check on the mortality at time of confinement can be given by getting hold of and training these dais. The other two classes are very necessary and will gradually become more popular among the people, but it is the indigenous dai who kills most patients and yet who will be used for some time to come. It is $3\frac{1}{2}$ years since we started a scheme in Quetta for training and superintending these dais and the resulting decrease in puerperal mortality has been most marked and even impresses the men of the place who at first thought that such a scheme was not likely to succeed owing to prejudice on the part of their wives. The scheme is based on that of the long established training school for dais at Amritsar, but there are a few differences in the rules to which I will call attention as I think they are valuable in practice, *viz.*:—(1) We allow any dai, whatever her age, to join, for often the very old dais are the most popular, and though they cannot learn much we can visit their cases and they learn to send for us if things are not going well. (2) When a dai joins the class she is instructed practically in our methods by a trained nurse midwife of class 1 who goes with her to 20 cases. This adds a great deal to the work of teaching them, but is so necessary that the time involved is well spent.

I append a copy of the rules for training dais.

The dais in Quetta are very friendly, but at the same time have a wholesome dread of what may happen if they work badly for they know

we may have them suspended or get the Political Agent to say they must not work at all in the town. When we first started our class the dais were summoned by town crier to the Civil Hospital where the civil surgeon addressed them and sent them on to me to be enrolled, almost all the dais of the town turned up then and others were induced to join the class later on by various methods; some pressure was used, but the money advantage forms a good inducement in addition to wholesome fear. Only the simplest teaching is given them, Doctor Brown's (of Ludhiana) book being used as the basis though not in its entirety. The more intelligent provide themselves with enemas and thermometers, but we do not teach douching as I think more harm than good might come from their giving douches. They have all provided themselves with bowls for lotion, nail brush and soap, etc., and I sell them small portions of potassium permanganate and boracic and iodoform powder. They are also taught to prepare ligatures for the cord.

For teaching a class such as this, no new organization is necessary in most places, as it can be done in addition to the usual hospital work. I consider that it is a good thing that the English doctor should herself have a good deal to do with the training and superintending of the dai as she will carry more weight than an Assistant Surgeon and also as she constantly goes in and out among the houses on her regulation visits the people will grow accustomed to her presence and will not be afraid to send for her in time of need.

As regards small towns it may happen that one of the nurse midwives of the first class may live there—she might be used as a teacher or trainer of indigenous dais with superintendence from the nearest centre where a proper class is carried on. She would need to be paid a little for her work and for taking dais out to cases, and I think there would be no difficulty in getting a trained woman of this class to take interest in the work: that is why I suggest a register should be kept of these nurse-midwives. These village dais would also have to be paid for attendance at lectures and for showing these cases.

The result of getting hold of these indigenous dais is shown by our statistics. The scheme has now been working for three and a half years. In the first year 387 cases were reported and this year 690. The total mortality has been 9 cases, *i.e.*, about 4 per cent. Of these deaths the larger number have been from causes not actually due to the confinement such as Phthisis, Bright's disease, Pneumonia or Small-pox. I give these figures to show how encouraging one's work has been in results. Even so one has constant disappointment in the dais for often they do not carry out these new methods, but give way to their old instincts or the pressure brought to bear on them by ignorant relations. Still the calling for the doctor in difficult cases and the regulation visit after confinement has made a great difference in the death rate. In all cases where trained

midwives and dais are concerned, the question of remuneration is a difficult and an important one. The nurse-midwives of the first class will probably be called in chiefly by better class, educated people, who will be ready to give the larger fees she expects, *e.g.*, Rs. 10 and over for the usual 10 days' visiting. I know of one Christian midwife with a very good class clientèle who gets up to Rs. 50 for her work. But this class of woman will vary her charges according to her patient's position.

The nurse-dais will also expect to receive more than the indigenous dais get, and it is here that the great difficulty comes in. I was told just lately by an educated woman in a large city that the women she knows still call in the ignorant untrained dais because they cannot afford the higher charges of the trained dais. This difficulty can only be overcome by subsidizing the good nurse-dai, *e.g.*, by giving her two or three rupees for each case on condition that she takes from the patient the ordinary fees of the indigenous dais. This involves making a charity of midwifery and means a great expenditure and much supervision of the cases. The alternative, *viz.*, giving the nurse-dais a fixed salary and allowing her to have fees at the rate of indigenous dais in addition, is apt not to work, as the nurse-dai may content herself with her salary and not take cases; such an instance has come to my notice in Baluchistan.

I am afraid the indigenous dai also has a tendency to raise her prices when she has obtained a certificate, but the doctor in charge of the class can do something towards keeping her from overcharging and can arbitrate between the dais and patients. As regards outfits for the dais, the nurse-midwives will be able to provide themselves with the usual requisites; the other two classes of dais should, I think, buy all their own things, with the exception of douche cans and enema syringes which might be given to the nurse-dais at a nominal cost. They are much more likely to value and use their outfits if they have provided it themselves. The better class patients now begin to enquire what is needed for the time of confinement and I tell them to buy the usual accessories on a limited scale.

Rules for the training of Dais at Quetta.

1. A class will be formed consisting of dais already practising in Quetta, or who will practise in Baluchistan.

2. The class will be held five days in the week for one hour and the course of training will last for two years. At the end of the course each dai who passes the qualifying examination will be given a certificate.

3. Each dai will receive two annas each time she attends the class. The dais will continue in their occupation while under tuition and will be encouraged to report every case they attend within 24 hours.

They will receive 8 annas for each case they report. All cases reported will be visited once without fee by one of the lady doctors.

4. A certificated dai is exempted from attending the class and will receive one rupee for each confinement case she reports.

5. The dais will be expected to call a lady doctor to all abnormal cases; failure to do so will be punished by a deduction from rewards otherwise due or by suspension from the benefits of the rules.

6. Deductions will be made in case of carelessness or neglect. For a badly torn perineum there will be a deduction of four annas. For a dead child, three quarters of the full amount will be given, for a miscarriage only half this amount, and if under five months, proof of pregnancy will have to be shown.

7. The total amount payable in rewards to any dai may not exceed Rs. 15 per mensem.

8. When certificated dais are available, candidates on joining the class will do twenty cases under supervision and the certificated dai will get two annas extra each time she takes a dai, under tuition, to a case.

9. The tuition of the dais and the visiting of reported cases will rest with the lady doctors in charge of the Dufferin and Good Shepherd's hospitals. They will keep a register of the attendance of each dai and of each case she reports and the date on which it is visited.

10. There will be an advisory committee, consisting of the Chief Medical Officer, Baluchistan, the Civil Surgeon, Quetta, and a medical member appointed by the Municipal Committee to whom the lady doctors can refer if necessary.

11. The lady doctors will submit monthly a bill of the total charges for the dais, for the preceding month, to the Chief Medical Officer, Baluchistan, for payment. The cost is now borne by the Victoria Memorial Fund.

CHAPTER VI.—PAPERS CONTINUED : Drs. G. J. CAMPBELL, WALLACE, SEN, GEORGE.

Dr. G. J. Campbell, m.d. (Glasgow), *Rainy Hospital, Tondiarpet, Madras.*

Without attempting to write a formal paper I should like to make a few suggestions.

The most important point is to popularize the custom of going into hospital for the birth of a child. Nothing will conduce more to this than that our hospitals for women should specialize in methods of eliminating pain and discomfort during childbirth. If we were in a position to guarantee to all who come to us a painless delivery, without extra risk thereby to the mother or child, the attraction would be so great as to overcome, in course of time, all objections to a stay in hospital, however great these might be on account of tradition or custom. Every means recommended by responsible members of the medical profession for securing painless childbirth should be studied, and tested as far as is compatible with safety. No lack of money should be allowed to stand in the way of doing this. The cost of anæsthetics and accelerators during delivery might be put under a separate item of expenditure, and whatever luxuries a hospital had to do without, there should be no stint in this direction. Donations could be invited for this special purpose, and might be secured from some who would not care to help the general funds of a hospital and thus subsidize western methods of treating disease.

To take concrete examples, now that it is known that much needless suffering can be prevented by a judicious use of Pituitary Extract along with chloroform, these should not be withheld, merely for the sake of economy, or because the patient is ignorant of the relief that can be obtained by means of them. After an extensive use of the preparations of Pituitary Extract, for four years, in cases of delivery in this hospital, we do not recommend its use in all as is done by some. We think it should be avoided wherever there is the least danger of producing in the child the dangerous condition known as "Vagus-Heart." This restricts very greatly its usefulness especially in first deliveries. But it is a blessed fact that in succeeding labours, in almost all cases, as soon as discomfort begins to be felt, it is possible by giving Infundin or Pituitrin ($\frac{1}{2}$—1 c. c.) and then putting the patient lightly under chloroform to secure that the birth will be speedily accomplished, usually within an hour, without consciousness on the part of the mother and without added risk to her or to the child.

As the effect on the child of the method known as "Twilight sleep" is still a debated point, I may mention the results of a trial of it we have made during the past two months, October and November 1917. Of 65 women delivered in this hospital during these months, 45 had Twilight sleep, 41 being Indians mostly high-caste Hindus, and 20 being primiparæ. Confusion is created by speaking of this as Morphine-Scopolamine Anæsthesia. What is Scopolamine but a synonym for our old friend Hyoscine? Morphine gr. $\frac{1}{4}$ and Hyoscine Hydrobromide gr. 1/200 were given as soon as labour had begun. An hour later Hyoscine Hydrobromide gr. 1/400 was given, and this was repeated whenever the patient began to remember recent happenings (*e.g.*, how many injections she had had). In only 19 out of the 45 was amnesia complete, by which is meant that all knowledge of the process was blotted out of the mother's memory. In the remaining 26, though there was not complete ignorance of what was happening throughout (in most cases because labour was too far advanced before the injections could be begun) the advantages of the method were still marked, as the amount of pain was negligible and the absence of fatigue afterwards was very striking.

The highest number of injections given in any one case was nine. No mother showed any bad effects from them. In 41 cases (out of 45) the children were quite healthy and there was no difficulty in making them breathe, though most of them were drowsy at birth. In three of the cases where the child was still-born the mother was already an in-patient before labour began, one on account of tuberculosis, one for profound anæmia, and one with malignant tertian malaria. Injections were given to these mothers to conserve their strength and were very efficacious in this direction. In the only remaining case of still-birth, the mother was a child of thirteen. She had had fever for four days before admission, the labour was premature and the child weighed only 3 lbs.

As far, therefore, as our observations have gone, we see no risk to a healthy child in making use of twilight sleep with ordinary care.

Another feature of twilight sleep that attracts the Indian woman is the darkened room. It gratifies her instinctive desire to hide herself at such a time. In her own home this leads to the darkest and dirtiest room in the house being selected, often with a fatal result as sepsis is induced. Still the contrast between what she would have at home and the blaze of light in a hospital labour ward is so great that she shrinks from the latter. To prepare our Labour ward of two units for twilight sleep, we painted dark green the upper part of the walls leaving the white-tiled lower portion as before. We had dark green oilcloth (easily disinfected) put on light frames which could be hooked on to the windows and thus darken them. Sufficient air and a subdued light were afforded by ventilators near the roof. When the labour ward was empty

it was flooded with the usual blaze of light and no germs could survive. As soon as a twilight sleeper came in, the room was darkened, a feeling of privacy was thus promoted and she slept peacefully till the event was over. To give light for the necessary manipulations a shaded electric light or lantern was used.

I hope it will not be thought from the above that I am so deluded as to consider the relief of pain the most important feature in maternity work. Far from it, there are advantages much greater than this. But Indian women are not yet alive in many parts of the country to these advantages. I therefore recommend painless childbirth as the most likely means of attracting them and of persuading them thereby to enjoy all the benefits of western midwifery.

Women's hospitals should be not only attractive but also *easily accessible.* Municipal councils and local boards should be constrained to pay particular attention to keeping in good repair the roads that lead to them. The powers that be in making tours might be respectfully requested to pay special attention to the state of such roads. Doolies or ambulance cars or other conveyances should be available at different centres to take expectant mothers to hospital. Just as to prevent loss of life and property by fire, there are fire-call stations all over a town, so to prevent loss by mismanaged childbirth there should be clearly marked places (post-offices, etc.), from which messages could be sent to the nearest women's hospital or to the place where a conveyance is kept. The headman of a village should be empowered to give a letter securing a free pass on the railway to any woman requiring to go to a maternity hospital and unable to pay her fare, and if the train is overcrowded precedence should be given to her. I do not mean from the above that everything should be free. This would be a great mistake. People usually appreciate only what costs them something. In this hospital we have from the beginning made a point of asking every one to pay five rupees for delivery if they can afford it. Many give far more, and some pay only eight annas, but practically every one gives something, and a feeling of self-respect is thereby engendered, and even well-to-do caste people now think it no indignity to have their ladies come to us for delivery.

Women's hospitals, needless to say, should be so managed as to be the safest places in all the land to give birth to a child in. Those in charge should see that some really effective antiseptic such as Perchloride or Biniodide of Mercury is made use of, however hard it may be on the hands of the staff. Scrupulous care should be taken to separate clean cases from those that have possibly been infected by sepsis before admission. In addition to the ordinary wards for aseptic cases and the isolation ward, there should also be a neutral zone (an ordinary medical ward does very well) where patients whose delivery is complicated by

preceding dysentery or skin disease, or who have been examined outside by an untrained dai can be placed, until time shows whether they have become septic or not. It is wrong to put such women into the ordinary maternity wards, and it is equally wrong to place them at once in a septic ward.

As to patients who have been delivered at home and become septic there, and who often seek admission to hospital after this condition has lasted some time, they should be received only into a hospital for infectious diseases, as is done in well managed municipalities at home. To admit such patients to a hospital with a maternity department, has always seemed to me as unreasonable as it would be at home to admit a child with scarlet fever, not to the Fever Hospital, but to a general Hospital for sick children. This, of course implies the existence of an Isolation Hospital with accommodation for such patients.

Much that has been said with regard to treatment in hospital can be carried out in private houses. Where there is no nurse in charge it is important to make it easier for the patient and her attendant to do right than wrong. To take one small example we insist on every patient attended in her home having two small clean white-enamelled basins. If she is too poor to buy these we lend them from the hospital. Every day on visiting we make up 1 in 2000 Perchloride of Mercury Lotion in these basins and place them in close proximity to the patient's bed or mat. The attendant is taught to soak her hands in one before touching the patient, and the other has some cotton wool placed in it, and is used to bathe the parts of the patient from which infection might take place. If we merely told them to use lotion, they would not bother to prepare it. If we put the lotion down further from the patient than a pail of dirty water they would use the latter, but as we make it easier to do right than wrong they do right.

With reference to educational efforts I should suggest that one or more of the women artists detained in India by the war might be commissioned to make a series of paintings from models to serve as the basis for lantern slides to illustrate a lecture showing the bad results that may arise from treatment by an untrained dai and the good results obtained by western methods. There should not be more than 12 slides for one lecture. The slides should be coloured. They could be informing without being at all improper. They should be graphic but not lurid. A large clock in the room might show the passage of time. A calendar on the wall would indicate how few days it takes for a woman properly treated to regain her strength. A conscientious lecturer would be careful not to overstate her case by saying that treatment by an untrained dai was *always* followed by these bad results, but only that they were always possible, and frequently occurred.

Much requires to be done in the way of improving conditions of child-birth by securing legislation to raise the marriage age for girls in this country to 15 or 16. It is not to the credit of Hindu society that it should be common for girls of 13, 14 and 15 to become mothers, and that efforts to raise the age at which married life is begun should be resisted strenuously by large sections of the community. This want of readiness for social reform should be taken into consideration when claims for home rule are made. As I have said before, if some political genius of Indian birth would devise a scheme whereby in each section of the community the attainment of self-government could be made to depend on its ability to do this and other elementary acts of justice to its own weaker members, a useful stimulus to progress would be given. Then when every section of the community had achieved internal reform India would be ready to take her place with honour, as an equal, in the councils of the nations.

DR. M. S. WALLACE, M.D. (Tor.), *Women's Christian Medical College, Ludhiana.*

To improve the conditions of child-birth in India, we must begin by improving the social customs of the women and this can only be by education. It is human nature to hang on to old habits, old clothes, old houses, old furniture, until some one comes along and shows us something better in such a way that we desire it for ourselves. It is the women of India, we must reach and it is the women who are difficult—very few read. They seldom go away from home. There is nothing new for them to desire, so why should they change.

The methods used so far are opening up dispensaries and hospitals, getting a few into coming to see us, do things in new and strange ways in the hopes of changing century long customs, because this way seems better to us. We train a few dais who speedily go back to their old customs, when out of the doctors' sight. A few house surgeons to give a little help here and there. At the present rate, it will take ages before we begin to move the masses. Where do we fail? We have left things too much to sentiment, hoping and praying that in some way the women will come to us and be induced to change their ways and we have never yet gone after them in a business like way as if we meant to get them.

Missionaries worked for years in China and reached only a fringe of the cities and towns. They were amazed and startled when some cigarette company determined to fill China with a certain brand. The company sent in a band of young business men and in a year they had penetrated every city and district in China, away up in the Ichang gorges cigarette signs were flaunting themselves on high mountain walls and women and children were smoking sample packets.

When "Billy Sunday" in America wants to gather an audience of tens-of-thousands, what does he do? He plans his campaign months

ahead. He gets the right workers. He prepares a place. He lets people know about it and they come—even though the end is a religious gathering —nothing is left to chance. Sound business principles are applied and they work.

When the Young Men's Christian Association want to reach men they go after them. They set before men the things they want and will take some trouble to find. They do not sit down and hope that men will be moved to come.

If we could use some of the modern methods of attraction on the women of India we could soon shake up their old ideas. The Island of Porto Rico passed the law of total prohibition through teaching the people by moving picture shows and by the example of foreign men on their streets.

Let us have a band of trained women to go from city to city. Give them tents and moving pictures and everything they need for this work. Get films of old customs of India's midwives and hakims, dirty streets and crowded courtyards and then show modern methods. Hospital interiors, out-door clinics with bandaging and eye treatments, operating rooms, children's wards, maternity wards and actual cases going on—massage, schools rooms—drill and breathing exercises, everything that would show actual conditions. One ladies' paper in America offers to lend films on "Bathing the baby," "feeding the baby," "weighing and measuring the baby," "Baby's daily schedule," "physical training," etc.

Along with the pictures we should have samples of everything for mothers and babies of approved kinds, beds, bedpans, douche cans, breast pumps, feeding cups, feeding bottles, water bottles, binders, napkins, disinfectants, patent foods, pneumonia jackets, oil heaters, spirit lamps, etc., etc.

In side tents teaching could go on daily in bandaging, sick cooking, giving enemas, caring for new babies, first-aid, acepsis, fomentations, etc., etc.

When the tents move to a new town the first two or three days could be spent in going about among the homes giving personal invitations and interesting women in the work. When some of us undertook to gather money for "Our day" through the streets of a city we found welcome everywhere—a large following of boys and girls showed us where to go. This way! this way are rich people! Even the poorest women on the streets gave a pice without being asked and we were able to get ladies out to a garden party who would never come before, although we sent written invitations. What was the reason? 'It was the personal element'. The going to them—they met us and immediately they offered their money. This is the way we must reach the homes of India to-day. Put before them something they want to do—see how quickly they will respond. Once

the women desire better conditions they have power enough to move the men and we will see better homes, better drains, better watersystems, better streets, better ways of living and above all better children. A new race of babies, born under intelligent conditions and reared in fresh air and cleanly streets.

Let the men see better baby pictures too, enlist their sympathies and money. There are thousands of men in India who can read, why not appeal to them to teach their women? Bombard them with pamphlets and letters and posters, give them no rest till they promise to teach a mother, a wife, or a daughter. If we wait for ordinary teachers to be trained, it will take centuries at the present rate of going. Once get the men to take hold for the sake of better children and the thing will be done.

Then will doubtless follow a women's paper, an information Bureau--training of girls in schools. Merchants could be induced to sell the proper things to women instead of the unsanitary baby bottles and things that are sold now.

It will cost much labour and money no doubt, but if we are really in earnest great things can be done in India as in other lands.

Dr. Y. Sen, f. r. f. p. & s. (Glas.), *Women's Medical Service, Raj Dufferin Hospital, Bettiah.*

"No one who has devoted even cursory attention to questions of public health in India can fail to realise how enormous is the waste of human life in this country resulting from the persistent violation of the elementary principles of hygiene.

"India's record in the matter of infant mortality is an appalling one. In the Central Provinces last year, the infantile death rate reached 265 per mille, in Delhi 233 per 1,000 and in the United Provinces 209 per 1,000. The lowest rate was recorded in Madras, and even here, the ratio was over 182 per mille. When it has been possible to introduce hygienic methods in maternity cases considerable improvement has been effected. This work, however, is frequently attended with extraordinary difficulties, owing to the ignorance which has to be overcome."

The Pioneer, September 6th, 1917.

How can we improve the conditions of child-birth in India? The phrase "Improvement of the conditions of child-birth" may be made to embrace either a wide field or it may be used in a restricted sense. In a broad sense it will include everything that will be productive of good health and education of the mother. Almost every baby-girl in India is a future mother. We can try to bring her up in such a way from her

infancy that she grows up to be an ideal woman as well as an ideal mother. This will include a number of conditions. The mother herself must be intelligent, fairly educated and healthy. She must be well conversant with the elementary principles of hygiene, so that, she will be able to observe them when expecting her own baby. She should be able to choose a proper lying-in room, and have sense enough to engage a proper midwife or nurse to attend to her baby and herself. She should know something about child-life and the duties of a mother before she actually becomes a mother.

All these can be included under the heading education and training of every girl with the special object of making her a good mother and a good citizen of India.

The causes of infant mortality can be attributed to very many factors, such as—

(1) Mortality due to defects or faults of the parents.
(2) Ignorance of the midwives.
(3) General ignorance.
(4) Unhygienic condition of the surroundings.
(5) Early marriage.
(6) Some undesirable social customs and ancient prejudices.
(7) Poverty.

In a restricted sense, the improvement of the conditions of child-birth would mean a proper lying-in room, aseptic condition of the surroundings and a well trained midwife.

In India, premature maternity, poverty and ignorance play a very important part in infant mortality, so the work of the reformer for this cause is not an easy one. She has to fight hard against ignorance, superstitions and all evil social customs and prejudices. In some parts of India the hereditary dais (indigenous) are looked upon as women gifted with abnormal powers, and the public while having great faith in them are afraid of them also, for they believe that these women when offended can harm them in various ways, being a kind of sorceress. Training of the indigenous and other dais although a very good thing, is not enough. We must take the public into our confidence, and try to educate them in hygiene and first principles of sanitation as well as infuse a little common sense into them. In other words the people must co-operate with us in this compaign against infant mortality. Both men as well as women of India should be made to realise this enormous waste of infant life. In schools and Colleges sanitation and domestic hygiene should form a part of the curriculum of studies. The students should get practical teaching on the subject. Meetings should be organised for the purpose and pamphlets distributed among people for the furtherance of the cause. There should be Inspectors to see that the instructions are

carried out properly. Even trained dais require supervision but that will be dealt with later on.

The late Sir Pardey Lukis while delivering an address to the Royal Free Hospital in London said that a very close relation existed between the diseases of India and the domestic life, and if women could be made to understand this, there would be a brighter outlook for the future. He showed how by observing sanitary measures and by keeping out the pests from the house, plague could be prevented. Malaria is caused by little pools of stagnant water collecting in some parts of the house. Infant mortality is due to the neglect of the elementary principles of hygiene. Sanitation is vitally connected with the duties of the women of the house, and any scheme which does not include an attempt to influence the women is doomed to failure. Men and women must be made to observe the law of sanitation. It is not only that the mass of people would not attend, would not understand but those who do understand lack the power of real belief. They must be roused into action. They must be taught something of Bacteriology, so that they will comprehend why we insist on asepsis.

While we are educating the public in sanitation and bacteriology we must be training our midwives too. We must try to recruit our midwives from a more respectable class of people—women of education and understanding—those who have got a sense of responsibility and who can be trusted to do their work conscientiously.

The women who are being trained now require constant supervision, because they are not quite trustworthy.

In the Report on the Municipal Administration of Calcutta for the year 1916-17 we find some really sensible remarks and I cannot do better than quote them here "the excessive mortality amongst females is almost wholly confined to the age periods 15-40 years." That is to say it occurs amongst females in the prime of life, and what is of such vital importance capable of bearing children. In Calcutta out of 4,669 infantile deaths 1,735 or 37·1 per cent. occurred during the first week. During the remainder of the first month 976 deaths occurred making a total of 2,711 deaths or 58 per cent. of the total infantile mortality. After this ruthless weeding out of the weaklings the mortality drops to 322 during the 2nd month, and 252 in the 3rd. From 3-6 months, it averages 175 deaths per month and from 6-12 months 143 deaths per month. During the first week of life the principle causes of death are premature birth and congenital debility. These alone were responsible for 70 per cent. of the deaths amongst infants who survive less than 7 days. Social and economic factors, particularly poverty, the strain of early and repeated pregnancy, prolonged lactations, constant exposure to insanitary surroundings, etc., all tend to weaken and debilitate the mother, and puny

sickly babies are the result. The other important cause of death during the first week is tetanus neonatorum (380 deaths out of 1,735). It is even more deadly amongst babies from 7 days to one month old being responsible for 50 per cent. of deaths. This is an entirely preventable disease due to dirty midwifery. There has never been a single case amongst the hundreds of cases attended by the Municipal midwives; this shows clearly that it is the unqualified midwife who is entirely to blame. It is carrying respect for ancient customs and prejudices too far when toleration kills over 800 babies a year. A Midwives Board, Registration of midwives and absolute prohibitions of unqualified practice ought to be brought into operation as soon as possible.

The other important cause of death at this period is bronchitis (220 deaths out of 976). This continues month by month and becomes relatively more and more important. It is the principle cause of infantile mortality in Calcutta and causes 1,505 out of 4,669 deaths or over 30 per cent. of the total. Most of these deaths are due to sheer ignorance and carelessness as the climate of Calcutta is by no means severe. The children of the poorer classes are mostly insufficiently clad.

The following statement shows the principal causes of infant mortality as percentage of the total:—

Diseases.	No. of deaths.	Percentage of total.
Bronchitis	1505	32·2
Tetanus	845	18·0
Congenital debility	775	16·5
Premature Birth	707	15·1
Diarrhœa	218	4·6
Infantile liver	103	2·2
Marasmus	40	·8
Other causes	476	10

A striking feature of the infantile mortality returns in Calcutta is the small proportion of deaths from diarrhoea and enteritis. This is due to the fact that very few infants are artificially fed.

The Health Officer of the Calcutta Municipality tried to open "Baby Clinics" to teach the mothers how to manage their babies. I quote the following from his own writing:—

"As I was fully aware of the great difficulties to be contended with in Calcutta, I enlisted Miss Webb's co-operation. The Lady Superintendent, Dufferin Hospital, volunteered to open a babies' clinic in connexion with the hospital.

As soon as this was established, it was hoped that it would be gradually extended to the babies brought into the world by the Municipal midwives. Once this stage was reached, special baby clinics, in charge of trained nurses with expert medical advice available on stated days and arrangements for supplying humanised milk, etc., would have been

started all over the City. Unfortunately Miss Webb reports that all attempts to induce mothers to bring their children to the Dufferin Hospital for regular examination have failed. The Lady Health Visitors did their best to persuade mothers with sickly ailing children to bring them to their quarters for advice and treatment without success. The only alternative was for the Health Visitors to regularly visit all the babies delivered by our midwives. As their time is fully occupied in supervising the work of the midwives, it was necessary to fix a limit to the period the babies were kept under observation. This was arbitrarily fixed at three months, and as far as possible regular weekly visits were paid from the 10th day.

The results are very encouraging and it is well worth considering whether additional health visitors should not be appointed to take charge of this portion of the work; the ideal to be aimed at is a maternity and child welfare section in charge of member of the Women's Medical service. Under her would be the present staff of Health Visitors and midwives and the extra staff required for child welfare work.

The Lady Health Visitors with their staff of midwives are doing excellent work in Calcutta. They had to canvass their district and win the confidence of the women before they could make any progress. In addition to the cases actually delivered by the Municipal midwives, a number of complicated and difficult cases were removed to hospital.

Baby welfare work.—All attempts to induce mothers to bring their babies for advice and treatment to a Baby clinic whether at the Dufferin Hospital or elsewhere have failed in Calcutta. The only alternative was obviously to regularly visit all babies brought into the world by the Municipal midwives, once a week if possible and keep them under observation. With 40-50 new babies arriving every month in each circle, it was necessary to limit the period of observation to prevent the Lady Health Visitors being overwhelmed with work and this was arbitrarily fixed at three months. As soon as the puerperal period of 10 days during which daily visits are paid by the midwives expired, the babies are entered on the Lady Health Visitors' register and visited weekly or fortnightly, till they are three months old. Only sick babies are visited weekly, cases which are doing well being visited once or twice a month. This branch of the Health Visitors' work in quite new, and so far it is very promising. It is obvious however that if any appreciable reduction in the infant mortality is to be expected, this baby-welfare work must be considerably extended and provisions must be made for supplying the urgent needs of the poor women and children. These are good nourishing food for the mother, fine clean milk for those babies who cannot be suckled and warm clothing for infants in the cold weather. About 6 dozen warm kurtas were distributed last cold

weather, to very necessitous cases, and were greatly appreciated. Charitable work of this discription, however, ought to be undertaken by the ladies of the place, and the clothes should be distributed to really deserving cases.

With regard to the very important question of feeding the mother during lactation, this also is a matter for carefully organised private charity. Each community ought to regard it as a sacred duty to see that every mother is supplied with abundance of good nourishing food, while she is suckling her baby. A fine milk supply at a reasonable cost is undoubtedly of such vital importance, that when, as in Calcutta private enterprise fails utterly, it ought to be provided by the Municipality. To municipalise the entire milk supply of a city like Calcutta is of course a tremendous undertaking. Whether this is practicable or not, nobody can say without the experiment, but something can be done in a small way by the establishment of Municipal dairies capable of supplying every infant with milk. With depôts all over the city, humanised milk could be prepared and supplied at cost price for the use of infants. If a few wealthy philanthropists would come forward, poor families could be supplied free of charge on producing tickets, which Lady Health Visitors, Municipal or Voluntary would distribute to deserving cases. With the Lady Health Visitors fully occupied in supervising the midwives and visiting the comparatively small number of babies delivered by them, it is clear that an increase in the staff is absolutely necessary if any real impression is to be made on the infantile mortality. Additional Health Visitors who will devote their whole time to Baby welfare work are urgently needed. With 3 Health Visitors in charge of 15 midwives, and 3 or 4 Health Visitors doing child welfare work, a separate section of the Health Department will have to be constituted with a really first rate lady-doctor in charge."

The Victoria Memorial Scholarships Fund was instituted in 1901 for the improvement of the conditions of child-birth in India. We also know that it has been trying to fulfil its object in two ways namely:—

(1) By training up midwives of a superior class, *i.e.*, the class consisting of women who are somewhat better educated than the hereditary midwives; and

(2) by trying to impart a certain amount of practical knowledge to the indigenous or hereditary dais.

Although the Victoria Memorial Scholarships Fund has been in existence for 17 years now, somehow or other it has not quite succeeded in fulfilling our expectations. This is partly due to the apathy and indifference of the Indian public. They argue that whatever was good enough for their ancestors is good enough for them. They are afraid of innova-

tions. They do not take into account the fact that the mode of life has changed. Town life with all its attendant evils was unknown in those days, the atmosphere was not surcharged with germs of diseases. Overcrowding, bad ventilation, sewer gas, etc., were practically unknown. People lived a healthier life, and there was less risk of septic infection. Even now among the hill tribes, labour is considered as one of the natural processes of life like eating and drinking. The woman does not need a midwife for her confinement. Sometimes as she is carrying a bundle of wood, she gets labour pains, puts down her bundle, delivers herself of the child, cuts the cord with a sharp piece of stick, ties it with the stems of some grass, takes up the infant in her arms and returns home. But since all the conditions of life have changed we must accommodate ourselves accordingly. We cannot allow our mothers and infants to die at child-birth. We must try our best to prevent untimely death for both, and it is with this object that the Victoria Memorial Scholarships Fund started. It is only the small minority of the educated class that engage the non-indigenous, Victoria Memorial dais for the confinement of their women. These dais under supervision prove excellent nurses, but when left to themselves are not so satisfactory. Still they are far better than the Chamain dais.

The non-indigenous or Chamain dais are harder to manage, and yet the bulk of population is in their hands. They know that people have blind faith in them and so they are quite indifferent to what others say about them. What a lot of mischief they are doing every day of their lives. Since my arrival here, how many such cases have I had. One case was a contracted pelvis case, and the deplorable condition in which she was brought here. Another case was a case of transverse presentation. As long as the woman could talk and stand their manipulation, they did not allow her to come to hospital, but when she became quite collapsed they sent her over to us. With their rough handling they had made a big fistulous opening in the bladder. The woman lay in a precarious condition for days, but ultimately she recovered with a big vesico-vaginal fistula, for which she had to be operated on afterwards.

I thought if I started a class for indigenous Dais here, we should be able to instil the first principle of asepsis in them as well as prevent their interfering with abnormal cases. But my hopes have not been realised, so far. During the last month we have had 4 such cases, and it has been the doing of the dais who are attending our classes. They only attend the hospital, because they are given an anna for each attendance. This place is a poperty-stricken place, and these indigenous dais get one anna for confining a woman of a girl and two annas for a boy; naturally, they are only too glad to earn an anna by attending lectures for an hour only. They do not want to lose their cases by

advising them to come to hospital. In fact it is not to their interest to have a maternity hospital at all.

When I was at Shikarpore, I found the same condition prevailing there. When first I went there one of the medical practitioners told me that at least 80 per cent. of their maternity cases died of puerperal sepsis and babies followed mothers. I had the opportunity soon of testing the truth of it. Never in my life have I seen so many deaths from Septicæmia. Fortunately I soon came into touch with one of the ladies associations there, and began to talk to them about these preventable diseases, and requested them to come to hospital for their confinements. I made arrangements for a few paying wards, and soon had the satisfaction of getting quite a number of maternity cases. A comparison for five successive years would show the difference:—

1912	50 cases.
1913	51 „
1914	49 „
	Maternity cases.
1915	68 cases.
1916 From January—April 30	13 „ only.
May 1916—April 1917	146 „

I am glad to say, that with my leaving the station, the number of maternity cases have not gone down. In the beginning of October the number was 133, so at the end of the year it must be larger than last year. This shows that the women as well as the male members of the family have found out the usefulness of the hospital.

So in my opinion, to improve the conditions of child-birth in India we should pay attention to the following facts:—

(1) Training up of midwives of a superior class.
(2) To impart a certain amount of practical knowledge to the indigenous dais.
(3) Training the children of indigenous dais like Dr. Henderson (of Nagpore) with the object of making them take up midwifery for their profession when they grow up is an excellent idea.
(4) Education of the general public in sanitation hygiene and bacteriology by means of popular lectures and distribution of tracts.
(5) Follow the example of Calcutta Municipality in having a staff of trained midwives, who should be in charge of the whole town, under the supervision of a highly trained Health Visitor.
(6) Have Baby welfare clinics.

(7) Have proper arrangements made for the feeding and clothing of the poorer classes after their confinement and during lactation.

(8) The construction of suitable maternity wards.

(9) Registration of all the midwives, whether living in towns or villages.

(10) Create an entirely separate section of Health Department for this purpose only. The Lady Doctors in charge of the Dufferin Hospitals are too busy to do justice to any work outside the hospital.

We must improve the conditions of child-birth in India. Our future depends on these little mites of humanity, we must have strong healthy mothers and strong healthy babies. A healthy body is accompanied by a strong and healthy brain. If we want to see India great, we must take care of our mothers and babies. Our aim will be to have our babies grow up into fine men and women, who will be able to change the face of the world for the better by their goodness and wisdom and one of our poet's dream will be realised, for she had a vision, in which she saw all the children of India strong in united strength and gorgeously glorious in wisdom, walking (their paths of life) like energy incarnate.

And babies—who can resist them? All babies are alike and since we take so much care of our own babies, why should we not take care of all? George Elliot says in her Silas Marner "In olden days, there were angels who came and took men by the hand and led them away from the city of destruction. We see no white-winged angels now. But men are led away from threatening destruction; a hand is put into theirs, which leads them forth gently towards a calm and bright land, so that they look no more backward; and the hand is a little child's."

Dr. J. E. George, L.R.C.P. & S. (Edin.), *Women's Medical Service.*

India being divided into two main races, Hindus and Mahommedans, the former again into many castes and sub-castes differing in religious views and ceremonies which touch the innermost life of the zananas and social conditions, no one effective system can be applied to meet the needs of the country as a whole. A general line could be followed applying to both races which will largely afford relief and ensure better safety to mothers and infants in maternity. I would formulate this general line as follows:—

1. As an excellent scheme already exists in the Victoria Memorial Scholarships Fund, to raise the scholarships of pupils associated with it from the average Rs. 10 or less to Rs. 15

plus dhobi and uniform allowance and later when certificated a salary of say Rs. 25 to Rs. 30 instead of the average Rs. 15 to Rs. 20 would attract a better class of woman than hitherto, and she would find easier entrance into the zananas. At present suitable women are not attracted to the scheme, for so many women have been injudiciously accepted cheap who were not morally good.

2. A larger number of Victoria Memorial Scholarships Fund Nurses might be insisted on for Municipalities—a woman to each Ward. A register should be kept at the Women's Hospital in the town registering the names of these Nurses and their Ward and all maternity results (to mother and child) reported up to 12 days to the Lady Doctor in charge of the Hospital, who will supervise or keep this register. In connection with the town scheme a European or Anglo-Indian Nurse might be engaged, and subjected to the orders of the Lady Doctor for house visitation and checking the cases undertaken by the Victoria Memorial Scholarships Fund Nurses, and reports of their work made to the Lady Doctor who will arrange, if necessary, for the relief of patients in or outside of Hospital. This town work would practically be in charge of this Nurse, with the Lady Doctor in charge as a guide and help; she would have to be provided with a good pay and a furnished house or rooms in the quarters of the Women's Hospital.

3. The entire exclusion of the untrained indigenous bazar dais from all maternity work in the town, by law, as she is past training being generally too old and well-rooted in all evil and mischievous practices of her mother, grand-mother and great-grand-mother, and is consequently a source of established danger wherever she goes—the extent of her evil practices is best estimated by medical women of long experience in India; nothing but a law, as in England, requiring that all midwives shall be certificated before practising will effectively alter the pernicious systems that exist and is associated with these women who have such a strong hold by hereditary right on houses in India. I cannot too strongly emphasise my point, and I would here add that a good deal of the gynæcology finding its way into our Hospitals owes its origin to the barbarous practices of these dais in bad midwifery, unnecessary and fearful massage, and unwise medication in the puerperium—while the feeding and care of infants is left to "Kismat" not being under-

stood by these women. How many valuable sons have been lost to Indian women (Ranis and peasant women) by the ignorance of these dais, and no son has been born again. So that if progress is to be effectively made the root of the matter for consideration lies in the problem of the indigenous dais.

4. Holding classes in the town in midwifery, Home nursing, care of infants, etc., with practical illustrations by magic lantern to the better class ladies of the town and apprising them of their danger when treated by unskilled hands.
5. To encourage women in every instance if possible to have their confinements in hospitals, it is cheaper, safer, while she comes into contact with the safer method of the Western treatment not only in maternity, but being in a hospital is generally impressed by what she sees and hears of the care of the sick, and so is invariably led to return, if need so arises, for other ailments for herself and her children advising her friends and relations also accordingly.

Some remuneration might be offered to already busy doctors, often overworked with their own hospitals, for supervision and interest in the town scheme, as well as for the lectures in the hospital when these are given by them.

My experience covers over twenty years of medical work in India, and this vexed question of infant mortality and the saving of mothers in maternity, has engaged my constant attention. I can think of no better plan than the foregoing suggestions.

CHAPTER VII.—PAPERS WRITTEN BY QUALIFIED MIDWIVES—Miss PATCH, Miss GRIFFIN, Mrs. VONWIEN.

*Kathleen G. Patch (*certificated Nurse, Poplar Hospital, London*), *Winchester Mission, Mandalay.*

Conditions of child-birth in the province of Burma may differ considerably from those in India proper, but the improvement of those conditions might be effected in similar ways in both countries.

Three periods must be dealt with:—

1. The period of pregnancy.
2. The time of confinement, including the first ten days.
3. The first two years of the child's life.

The midwife is too apt to consider that the second period alone concerns her; but however careful her efforts may be at the time, they will be largely in vain unless they are maintained patiently and continuously through the third period.

1. *The period of pregnancy.*

Women should be visited and encouraged to register their names at an early date. By this means the lives of both mothers and children might often be saved. For example:—

(*a*) *Children of very poor-ill-nourished women* who should be supplied with milk, nourishments, tonics, cod-liver oil, etc.

A woman who lost her husband three months before her confinement, was entirely dependent on an aged mother who made cheroots. The case was notified to the Society for the Prevention of Infantile Mortality, and milk and money for food were supplied both before and after the birth of the child, which, in consequence, turned out a prize-baby.

(*b*) *Children of diseased parents.*—Careful enquiries should be made as to how many children the woman has had, how many have died, and why they have died.

Not infrequently it will transpire that six, seven or even eight or nine children have *all* died during the first two or three months. If such cases are reported to a doctor, and a course of Mercury prescribed to be carried out under the Midwife's supervision; during the whole period of pregnancy, very good results may be obtained.

(*c*) *Abnormalities and complications would be detected early.*—Abortions might be prevented, minor ailments treated, and such troubles as albuminuria recognised and checked at an early date.

* Prize paper.

2. *The time of confinement and the first ten days.*

Native prejudices are hard to overcome but much may be accomplished by the tactful nurse who distinguishes between essentials and non-essentials. For example:—If the patient greatly desires to smear herself with saffron—no great harm is done. Due care too, should be taken that she should not lie with her feet towards that quarter where an open-mouthed monster lies in wait for sick folk! Interest should be shown in native ceremonies such as that of offering the new-born baby in its cradle to the good spirits.

Personal sympathy in such matters will inspire affection and confidence, while such harmful customs as trampling on the mother before birth, or roasting out the evil spirits afterwards, may be gently but firmly battled against.

The untrained midwife practically never gives her services free. The supply of trained midwives should be increased as rapidly as possible and free treatment should be offered to the poor, in addition to a little harmless bribery and corruption; such as a frock and a powder-pot for the baby.

The trained midwife may, however, conduct her cases with skill and care, and yet fail badly in the *after care*. So much may be accomplished in those first ten days. Native methods may be superseded by English ones—habits of cleanliness and regularity may be instilled—and real friendship formed. Patients usually appreciate warmly the care and thoroughness of the English-trained nurse; and from the sixth to the tenth day, the mother is strong enough and in a receptive mood to learn about the importance of the daily bath, the regular hours of feeding, the care of the skin, the mouth and the eyes. It is the tiny details that count. A careless slap-dash midwife who hurries her visit does not win her patient's respect or affection. The midwife who washes out the binder and little garment for the next day, and attends carefully to all details of her work, is at once respected, trusted and consulted; and her popularity soon spreads.

3. *During the first two years of infancy.*

Midwives should cultivate a wide vision and high ideals and should realise clearly that it is their duty to see the baby through its whole infancy, thus only can they effect any real improvement in the conditions of child-birth. The baby has to be steered through various critical stages; such as teething, weaning, walking, at all of which times intelligent care is needed, and continued visiting is of vital importance.

Babies get a good start perhaps, in those first ten days, but how many of them increase steadily in weight afterwards? Some indeed markedly decrease.

Mothers generally fail to report ailments even if they recognise them. It should therefore, be the nurse's aim to discover them herself by patient visiting and careful investigation.

"Do you give the baby (aged 3 weeks) rice?" "Yes," is a constant reply.

"Are its bowels regular?" "No, they have not been moved for 4 days." Then the little pencil-shaped injection of soap acts as a miracle, confidence is inspired and the poor baby is relieved.

In the case of sore eyes, it is useless to expect the mother to tend them properly; the nurse must do it herself, daily, if it is to be done effectively.

Advice as to cold weather clothing, the treatment of rickets, methodical weighing, advice when weaning, such matters are perhaps the most arduous and important duties of the nurse who really desires to improve the present conditions. Diligent visiting and much patience and tact are essential.

The problem of sick and delicate children.

Very few babies of the poor and ignorant will survive a severe illness such as dysentery or bronchitis if treated at home; while washing babies and bottle-fed babies are the despair of the district nurse. The hospital is of course the best place for acute cases, but it is often feared and shunned by the ignorant poor; and there still remain the ailing and bottle-fed babies.

A central depôt would partly meet this need and might take various forms:—

(*i*) *A small crèche and Milk-depôt combined,* where babies could be fed and washed by day, either with or without the mother—and where others could come for periodical weighing—inspection and advice. Ill-nourished mothers could be supplied with milk.

(*ii*) *A central home* where three or four midwives might live together, whose duty it should be to take in special cases from time to time. Many mothers are so poor that they must work, and they are not always unwilling to part with the baby by day. This would ensure the daily bath, properly diluted food regularly administered, and a clean bottle, food for the night already measured and diluted should be supplied.

This method has been tried and proved useful. In one case a baby whose weight decreased from $6\frac{1}{2}$ lbs. to $4\frac{1}{2}$ lbs. in the first two months, put on 4 lbs. in the next two months when it was cared for daily by the trained nurse—being sent home at night with its clean bottle—the necessary supply of food.

(*iii*) *A training home for district nurses* is surely a real need; and amongst its many activities the care of ailing or bottle-fed babies would be an important feature. Such a scheme is now under consideration in Burma. Village girls would be encouraged by stipends to train, and would after training return to their villages as certificated and salaried district nurses. Such a training would necessarily lack much that could be acquired in the usual hospital curriculum; but nevertheless girls would learn better how to manage cleanly and economically in poor homes and would be taught how to advise expecting mothers as well as the after-care of the babies. If possible three months or so in hospital should be arranged.

If such girls married, they would be object lessons to their neighbours; and if they practised as nurses they would gradually introduce enlightened methods into their villages and far-reaching results might be expected.

The importance of European supervision.

It is obvious that good results can only be obtained by constant and adequate European supervision and perhaps this is the most vital matter of all.

The best native nurses tend to deteriorate and to lapse into native ways. For example:—

> At a prolonged Primipara case a certain nurse makes it her practise to use for the unfortunate patient, oil, borrowed from the relatives—which is of course surgically filthy. Unwashed hands—unboiled water—dirty rags are alas! often used. As a Mahommedan patient remarked "Don't think your pupils will carry out these rules when they once leave you—no one in Burmese clothes *can* take pains!"

There are exceptions, but even the more careful ones can hardly be expected to persevere in *helping mothers in spite of themselves* which is what it often amounts to, and which can only be expected of the more enlightened European who both knows and cares.

Quality should be constantly emphasized above quantity. The nurse's area should be limited, as should that of the Superintendent.

A larger bonus should be offered for every child who attains the age of two years, than for the number of cases confined.

Both Nurses and Mothers should be inspired with a healthy rivalry amongst themselves, and praise should be given when possible. Baby shows may be of some small use, as also a little bribery in the shape of monthly prizes for those who have most increased in weight. This not

only encourages the mothers but keeps them in touch with the nurse. *The high rate of mortality amongst infants is* mainly due to:—

1. *Ignorance of midwifery* which also accounts for mortality amongst mothers—

(*a*) To combat this evil, Societies for the Prevention of Infantile Mortality—training centres for village nurses and small Maternity Hospitals should be established as widely as possible. Small Maternity Hospitals would possibly effect more than the much dreaded big hospital where rules cannot be relaxed. Such hospitals would be a very useful centre as a dispensary where the babies could be regularly weighed—and they would admit primarily—

(*i*) Abnormal cases.

(*ii*) The very poor who fear the bigger institution and yet have no one at home to tend them.

(*b*) The midwife's profession should be made attractive as regards pay which should be arranged on the results system. Special stress should be laid on the after-care, and the poor should be attended free.

2. *Ignorance of the treatment of Infants.*

(*a*) In addition to the above suggestions, out-door dispensaries might be established in connection with Vaccination centres, and small ailments could be treated at definite times.

(*b*) One English superintendent might devote her whole time to visiting every newly-born child as notified to the Registrar and those needing special care could be reported to the Society for the Prevention of Infantile Mortality or the nurse working in that district.

(*c*) Lectures should be given widely to young women and elder school girls on such practical subjects as:—

(*i*) The importance of the daily bath—*especially in ill-health.*

(*ii*) Why young babies should not be given rice.

(*iii*) Why thick mosquito curtains should be avoided, etc.

3. *Insanitary conditions.*—Here again something may be accomplished by constant visiting and much tact—while special evils should be reported to the Health Officer, lectures too are of use in this matter.

4. *Low vitality and disease of parents.*—Such a difficulty can only be dealt with by visiting during the period of pregnancy. Doctors serving on the Society for the Prevention of Infantile Mortality Committee would give free advice and the treatment prescribed

should be carried out under the Nurse's careful supervision; while drugs or food must be supplied by the Society's Funds when necessary. The subject is a vast one and the problem full of difficulties which almost fill one with despair at the outset. No revolution in methods can be expected or effected, but prejudices *can* be gradually overcome and better methods introduced. Perhaps the main points to emphasize are:—

1. *More and more visiting* by a larger and larger staff of trained midwives, *i.e.*, an increased number of training schools and a salary that will attract.
2. *More European supervision.*—Real philanthropists are needed for an extremely arduous, disappointing and up-hill job, and special appeals should be made for their valuable services. Thoroughness, grit and tact would be essential qualifications.
3. *A central organisation with close co-operaton.*—Societies could be run on various lines but the Committees should be as representative as possible, so as to ensure close co-operation between the doctors, the nurses and the rich native community.
4. *Concentration of effort in limited areas.*—European supervision is exceedingly difficult to get—funds are not too plentiful and the supply of midwives is comparatively limited. It is best, therefore, to work a small area really well without stint of workers or funds; and to prove to the public by carefully prepared statistics that conditions can be improved, given the necessary implements. An appeal on such grounds would surely find considerable response.

It has been said that the Burmese woman is one of the most charming of women, the best bargain-driver in the world, but the very worst mother. Just as we do not expect very much in the way of self-help from young children so we cannot at present look for self-help from the native mothers. We have to help them to help themselves and in spite of themselves, and the gradual introduction of European methods can be best effected by giving the native midwives a first-class training and sparing no effort to inspire them with high ideals for their very important vocation.

EDRIS GRIFFIN, *Nursing Sister, Health Visitor, Delhi.*

The improvement of midwifery conditions among Indian women is a difficult problem, but one to which every lady doctor and nurse in India should devote all her energy to improve. The suffering of the poor women at that time will hardly bear description.

It is difficult to find out where to begin, there are so many things to combat—superstition, ignorance and custom. One thing is obvious, the women and the dais must be educated and taught the need of better things.

The indigenous dai is an institution that, like superstition, will die hard. She is a great power in the land, her methods account for the greater part of the mortality among mothers and babies. It is no use trying to supersede her as she has too great a hold on the people. The indigenous dai can be improved by being made to attend classes, and by supervising her work, if taken tactfully she takes an interest in learning new methods. Some dais are quite intelligent and when the reasons for cleanliness, etc., are explained to them they are quite willing to improve. They know no better way—as their grand-mothers did, so they do.

Apart from teaching the dais, the people themselves must be taught and shown the need for improvement. The mothers and mothers-in-law have their own ideas as to how confinements should be conducted, and they insist on the dai doing it according to their notions. So when a dai is taught cleanly methods, she is almost always hampered and prevented from carrying them out by the patient's friends. Both Hindus and Mahommedans, except a few rich and educated families, choose the darkest and smallest room in the house (if there is more than one room) for the event, and no preparations of any kind are made. At the time a bundle of dirty rags is thrown into a corner for the dai to use. The people consider lying-in women unclean, and save up the dirty rags, etc., for such occasions. The custom of keeping the patient without food for the first six or seven days, and also of giving her a bath on the third or sixth day, helps to swell the death rate. The mother not being fed, naturally has very little milk, and the infant suffers. To make matters worse the unfortunate baby is given honey, sherbert, a concoction of *ghur* and spices, bazar milk, in fact anything but its mother's milk. Consequently many babies die during the first week of life. My colleague and I have had ample opportunities of seeing this dreadful waste of life, and we have arrived at the conclusion that the only way to improve the conditions of child-birth is to educate the mothers by visiting them in their homes, and taking a personal interest in them and their babies. Telling them the evil results of irregular feeding, and of giving the babies anything except what God has provided. A little simple physiology comes in here, the women are easily interested and see how babies get indigestion and diarrahœa,—when one takes the trouble to explain to them. Their custom is to feed the baby whenever it cries and only when it cries. We have managed to get some mothers to feed their babies regularly from the day of birth, with the result that the babies have been the show babies of the street they live in. The mothers tell you with

pride that "Baby is so good and sleeps all night." The people should also be shown the necessity for absolute cleanliness and told what not to allow the dais to do, and what to make them do; such as to make them take off their rings and bracelets, wash their hands and the patient's body, before making an internal examination; to see that the dai gets water boiling, and show them when it is really boiling—generally they only let it get hot. Not to let the dai put her hand in to drag away the placenta, or to pull on the cord. The friends insist on the placenta being removed at once, they should be told that nature will do her own work if she is not interfered with—many cases of post partum hæmorrhage might be prevented in this way. If the dai refuses to pull out the placenta as soon as the child is born, they say she is no good and send for another dai. The mothers should be told that it is not only unnecessary but harmful to make the baby have a motion as soon as it is born, and the dai should not be allowed to insert her finger into the child's rectum and squeeze the pelvis in order to produce the motion. Also she must not be allowed to press down the child's gums and push her finger down its throat, "to open it." We have seen babies gums suppurating from this treatment, and needless to say, they are unable to take the breast on account of the pain in the mouth. All these things the patient's friends make the dais do, therefore it is highly important to first teach the mothers and then the dais. The patient's friends should be shown the evils of making the patient sit on two stones or cakes of dung, on the floor, for the child to be born. Many do this among the poorer classes, and even the better class patients insist on the uterus being pressed down from above during the whole of labour, and often before labour begins in order, as they think, to expel the child quickly. This probably accounts for the large number of cases of prolapsed uterus that one meets with.

Classes for dais should be held, and they should be taught the evils of the above methods and the value of cleanliness. They should be shown how to wash their hands and disinfect them and their patient's genital parts. They must be told why this is necessary. They need not learn a great deal of anatomy but just be shown the pelvis and a model that they may recognise a normal woman. They should be taught to diagnose when a pelvis is deformed, and when the child is coming in abnormal ways, so that they may get help before it is too late to do anything. These things are best demonstrated on a dummy. In a breech case, they invariably get the head extended and the arms up, it is a good thing to put the dummy fœtus in this position, in the dummy, and let the dai see the futility of pulling on the legs, as they always do. She will see how the head is caught by the Pubes, and will learn more from seeing it once, than from weeks of hearing it read from a book. (Of course they cannot read themselves.) We have taught many dais how to manage a breech

in this way. Before, in almost every breech case a dai had, the baby died because the dai did not know how to extract it.

If an indigenous dai learns to be cleanly, to wash her hands and her patient, to diagnose a normal case, and manage a breech, and find and control the uterus she will do very well and more cannot be expected of her. The teacher must go to her cases with her and show her there, as hospital training is very little good for work among the poor. A dai who has had only Hospital training is all at sea when she goes to a case in a small house, the conditions are totally different. The greater part of the population is dependent on the indigenous dai, so she must be taught in the patients' own homes.

The dais must use the things at hand, and the teacher must show them the best way to do a case with what the patient has. The dais are too poor to provide soap or disinfectant, but can be taught to boil water and use that for their hands, their patients, the babies eyes and all other purposes. "Kully" or "atta" can be used instead of soap. Ordinary bazar thread can be boiled for the cord, and the knife which is to cut the cord (scissors are not often obtainable) can be boiled also, and then put into boiled water till required. Rags can be clean, and the women and dais must be taught to wash them and put them away clean in readiness for the event. We find the dais need constant supervision, or very quickly revert to their old methods, more especially as the old methods appeal to the patient's friends, and are less trouble to themselves.

A good plan would be to make all dais register their names and get a licence to practise, this should be obtainable at a nominal price, say 4 annas, and should be renewed annually, thus the Health Visitors or teachers could be supplied with a list of practising dais and could gradually get into touch with them. Only tact will win them, but once the dais are on the side of the teacher the rest will be plain sailing. Dais who attend a class and obtain a certificate, might be given their licences free, and only be required to register their names annually. The Health Visitor would continue to keep an eye on their work.

Dais should be given a small remuneration for attending classes, two annas a time would be sufficient. They should be encouraged to call their teacher to their cases. This is most important, as practical instruction is the thing most needed, also it gives the teacher a chance of making friends with the mother and her relations, to say nothing of the crowd of neighbours who are always present on these occasions. At one case one may have the chance of teaching 15 or 20 women. Therefore the dais should be given a reward for calling their teacher to cases, if she is there before the birth of the child, one rupee is not too much.

Each city or town should have several Health Visitors, and these should be teachers and superintendents of the dais. They must be real

friends of the people ready to help and sympathize in all the little troubles of daily life.

Able to advise the mothers about bringing up their children, teach them simple hygiene, and the ordinary diseases of children and their prevention. They must tell them how to take care of themselves during pregnancy, making them understand that a healthy mother makes a healthy child.

MRS. VONWIEN, *certificated Nurse, Jubbulpore.*

With reference to the notice in the newspaper the " Statesman " of the 22nd August 1917, issued by the President and Committee of the Victoria Memorial Scholarships Fund, calling for the experience of those most concerned with the practical direction of the work of the improvement of the condition of child-birth in India, I beg to offer the following observations on the subject.

Before doing this, I would like to state that I am a fully qualified midwife and sick nurse, with ten years' experience. I received my training in the Dufferin Hospital, Rangoon, under Drs. Fowler-Thompson and Sexton. I hold two diplomas: one for sick nursing, dated 27th July 1905. One for Midwifery, dated 6th July 1906.

On completion of my training, I worked for six years as Matron in charge of the Akyab General Hospital, which appointment I resigned on my marrying. Unfortunately my husband lived only nine months and my baby being born soon after, I was obliged to give up work for some time and to leave Burma. I then made my home with my husband's people in Jubbulpore where I still reside.

Shortly after the appointment of Visiting Nurse was sanctioned for Jubbulpore, I was appointed to the post and have held it since October 1914. As this appointment was created solely as an experiment, I was given no stated rule by which to work, and I need not say that many were the blunders I made at the start. But as time went on, and I got to know the people well, and they to know me, I am thankful to say that my efforts improved and were gradually appreciated. The people not realizing what my mission was, would refuse me admission into their homes; now my visit is looked forward to with pleasure.

My work consists chiefly in visiting houses in which births have taken place. To do this, my thanks are due to the Secretary of the Municipality who sends me daily a list, showing where births have taken place in the whole town within twenty four hours. With this as a guide, I go into each home; here I make suggestions for health and comfort, treat simple cases, or give a note to the mother to the nearest dispensary. If there be a home nearby which I visited before, I revisit it to see the progress of both mother and child. I also revisit homes where either the

mother or child were found to be ill or where premature births have occurred.

Considering the crude way in which mothers are treated by dais, the mortality amongst them is not high during the lying-in period. Those unfortunate cases where death has occurred, are usually puerperal cases that can be traced to the neglect of the dais who feel no responsibility, and are quite unconcerned as to what may happen to their patients. Against the death rate of mothers, it is pitiable to note the mortality of new born babies. This, I have in my humble experience found to be due to the following causes:—

(1) *Asphyxiation.*

Very often I go into a home where a birth has occurred, only to find the little one dead. On enquiring the cause of death, the dai coolly tells me that the child was livid, turned blue and then died. Bad as one may feel to hear this, knowing that a knowledge of artificial respiration might have saved the infant's life, one can say nothing to the dai who has comforted the mother with telling her it was her fate that was bad.

(2) *Tetanus.*

Here again we find death due in a measure to the ignorance of the dai who has not properly attended to the umbilical cord. She does not yet realize the value of cleanliness and will often with dirty finger tips, apply a little oil to the cord, the result being septic tetanus.

(3) *Bronchitis.*

This is usually the result of the child's first bath. The custom among Indians is to take advice from a Brahman, as to the best day for this bath. He usually decides on the fifth or seventh day. Up to this day the child is kept in a badly ventilated room, with every niche closed and hardly any light. But when the bath takes place everything is turned out, the room cleaned and the child given a bath in the open in hot water; the result being a severe attack of bronchitis that may end in death.

(4) *Abdominal troubles.*

The *first* is the belief that the child should not be placed to the breast till after the 3rd day. Consequently the child's intestines do not receive the cleansing that the colustrum would give.

The *second* trouble is caused by "gooties" or pills made up by local *banias*, mixed with goats milk or honey and poured down the helpless infant's throat. On enquiry I understand that medicines of various kinds are stocked by *banias* and are supplied by them for even big children.

Mothers, I find, are beginning to lose faith in these remedies, and as their faith in our advice and treatment increases, I trust the use of these drugs will be entirely given up.

The *third* cause of abdominal trouble, I have found to be, bad milk. This, I am glad to say, is least among the causes of infantile mortality, as artificial feeding is seldom necessary in an Indian home. Unfortunately, reliable dairy farms are few and far between in India, and even Europeans are obliged to use milk supplied by ill-fed dirty cows, drawn by a still dirtier *gwallah*. In such cases, where artificial feeding must be done, I do not usually recommend bottles, as with few exceptions, the mothers do not realize the great importance of keeping bottles scrupulously clean. A surprise visit usually discloses this, but an expected visit finds bottles thoroughly cleaned. I prefer the old way of feeding by spoon and from a brass lota, as Indians always carefully clean every brass utensil daily.

(5) *Ophthalmia.*

Another ailment, common among infants, though not fatal to life, is opthalmia. The results of this awful complaint one sees daily in the streets and in the dispensary.

I give the above as the chief troubles I have come in contact with and very diffidently take here the opportunity to make a few suggestions which might help to better matters for the poor little souls that are perishing daily.

Suggestions:—1st I would like to suggest a stricter registration of dais as I often waste hours in a fruitless search for a dai. Another suggestion that would, I feel sure, prove beneficial would be to train dais in a Maternity Hospital for at least six months. There, they might be permitted to attend lectures, assist at confinements, attend to infants and be taught very specially the use of artificial respiration. These trained dais might for a while be sent to conduct confinements free of charge. The usual cost of a confinement is Re. 1 for a boy child and 8 annas for a girl. The funds required for the maintenance of these dais would, I feel sure, be subscribed for by well-to-do Indians, who would be too willing where the protection of infants is concerned.

The 3rd suggestion is one that was made to me by the Lady Superintendent of the Elgin Hospital, Dr. Batho. She asked me to give lectures in each of the Municipal schools in the town to women only, and offered me every sort of assistance in this matter. The lectures, so far, have been on "How to treat infants and mothers during the lying-in period." "Care of infants during teething and simple ailments." Judging by the attendance and the attention with which I am heard I think these lectures are very much appreciated. My audience consists of all castes and creeds, rich and poor, who meet together with one

common bond—"Love for their babies," and in their affection, freely ask me questions on points that are not clear or for advice on other points.

My 4th suggestion would be the usefulness of occasional baby shows and prizes given for the healthiest baby. I know how proud the Indian mother can be of her baby and I am sure this would be a good thing.

I must now apologize for the length of my essay and beg that you will consider that it is zeal for my cause alone has carried me on from page to page; that cause which must and will appeal to all classes, all creeds, rich and poor, intelligent and ignorant, proud and humble, the highest cause on earth "The protection of our Babies."

CHAPTER VIII.—EXTRACTS FROM PAPERS WRITTEN BY QUALIFIED DOCTORS AND NURSES.

Dr. Marks, Multan, speaks of the necessity of registration of dais and suggests that it should be carried out locally where opportunity offers. With regard to the education of the people, she mentions the delightful story "Life, Light and Cleanliness" used in the Punjab Education Department and suggests that a book on similar lines should be written for women and made one of the standard books for Primary Girls' Schools.

Dr. Cardoza, late of Quetta, suggests:—

(*a*) That parents should be educated to require healthy sons-in-law and should insist on his life being insured with a society which carries out a rigorous medical examination.

(*b*) That a knowledge of the true nature of venereal diseases should be spread in every town and village.

(*c*) That accouchement packets should be provided as in the London districts.

(*d*) That an Association of Women Sanitary Inspectors and Health Visitors should be established with a recognised Training Centre and the position of the women safeguarded.

(*e*) That a State-Aided Maternity Benefit should be instituted.

As a first step to these measures she recommends the formation of a Midwives Board for India.

Dr. Mary A. Browne, Municipal Maternity Home, Byculla, Bombay, considers that pre-maternity and congenital weakness are the largest factors in causing infant mortality and speaks of the necessity for antenatal supervision. She describes the Infant Welfare centres in Bombay and the pre-maternity work done. She also speaks of the advantages of the Maternity Homes which attract a number of poor women in Bombay City for their confinements and where they are attended in a proper and cleanly manner. These homes are also centres of training for midwives. Dr. Browne thinks if these trained midwives could be kept on to attend cases in the city under supervision from the Home, the day of the untrained dai would be at an end.

Dr. Bidhu Mukhi Bose, M.B., Calcutta recommends the provision of pure milk supply for children, food for pregnant women of the poor classes especially in large towns, district nurses and women health visitors, shelters or crèches for young children and improvement of sanitary conditions generally. Dr. Bose states that she does not con-

sider early marriage harmful to the infant because in Bengal where the practice is prevalent children are born healthy.

Miss Twiss, formerly Lady Superintendent of Nursing, Medical College Hospital, Calcutta, recommends for India:—

1. Compulsory registration of midwives.
2. Supervision of midwives.
3. Establishment of local centres under Medical Officers of Health.
4. The securing of suitable women "welfare workers."

She recommends Anglo-Indian women of good education for work among the Indian people, and points out that the key to success lies with the individual worker, rather than with powerful committees. Energy, tact and optimism will gain the confidence of one mother after another.

Mrs. Turner, Kolinson Mills Compound, Dadar, writes an account of maternity conditions among women employed in mills. A medical officer (Parsi) is employed for the factory. Male hands are cut two annas per mensem and women hands one anna per mensem for his salary. A man goes round waving a flag to announce the doctor's visit. Mrs. Turner suggests that a nurse should be employed who would go round before the doctor's visit, get the women's confidence, accompany them to the doctor and explain their ailments. She also suggests a scheme for a maternity benefit in mills for those women who employ the nurse at their confinement, the nurse being provided with all necessary appliances.

Mrs. Lawrence, Midwife, Mhow, suggests that where Indian women are grouped together as in mills, railway communities, tea gardens, villages, a few quarters should be set apart for the purpose of confinements—one for Hindu women, one for Mahommedan women, one for dais. Two Indian dais should be instructed in cleanliness and paid Rs. 10 or Rs. 12 per mensem. Any local nurse or woman doctor would, she thinks, be pleased to help, and would supervise dais and quarters daily for payment of carriage allowance only. Pregnant women should be given 1 lb. of milk daily from the fifth month of pregnancy and for nine months after the birth.

Mrs. Chowdhri, Sub-Assistant Surgeon, Barabanki, gives a vivid description of the Indian lying-in-room and of the patient's unhappy condition during the puerperium. In Eastern Bengal where the people are very orthodox, the room for the confinement is arranged in some place where none of the members of the family are likely to go, very often where the refuse matters are thrown. There a few bamboos are placed and a room built with walls and roof of grass, the thickness being only one-eighth of an inch. As these places have a heavy rainfall the

discomfort of the mother can be imagined. A number of medicines are quoted as being used for child-birth—these include goats hair, scorpion stings, monkey's skull, snake skin. The hairs of the oldest man in the village are tied on the child's head with the belief that the child will live to an equal age. Camels' hair is believed to attract a fœtus and for this reason is applied in a bunch at the vulva. A cock's head is tied near for the same purpose. Many other extraordinary methods are practised. It is believed among the women that disease is a manifestation of the advent of a god and that any medicinal treatment will drive away and offend the god. Hence they prefer supernatural treatment

Mrs. Chowdhri suggests:—

1. That legislation should forbid the practice of untrained dais.
2. That centres should be opened for the training of indigenous dais.
3. Appointment of trained dais by municipalities.
4. Supervision of these by women doctors.

Miss Misra, Sub-Assistant Surgeon, Naini Tal, suggests that a book should be written on improvement of conditions of child-birth, and taught in the schools to boys and girls alike when they have reached a suitable age. In this way they will be ready later on to accept and even initiate improvements.

Miss Misra also points out the danger from dais who have been trained in a hospital and work without supervision taking abnormal cases and thinking themselves doctors. She says if such practices were hindered there would be less septicæmia.

Miss Vidyabai M. Ram states as regards the room of the lying-in women that first and foremost is the wretched condition of the room that is being used for the purpose of conducting the accouchement.

It is absolutely dangerous, worse than the celebrated and historic Black-hole of Calcutta, which cost the lives of hundreds of people. Even the very holes in the doors and windows of the room in which the woman lies are sealed with plugs of clothes and rags of all sorts from the houses of the rich down to those of the poor.

Usually khalkuva and the privy (which is dug into a hole in one corner of the room or underneath the bed) finds a place in the same room.

Bathing, cooking and passing of stools is all done in one and the same room. Placenta is also buried in the same room.

Heated ashes, excreta of goats and animals and such other objectionable materials are used in place of hot water bottles or sand bags for the cheap purpose of imparting warmth to the patient.

Kerosine light (with a value of 3 pie) or of a better kind, but with-

out a chimney, from which is seen issuing enormous volumes of smoke and carbonic acid gas is placed just near the bed of the lying-in woman; also the smoke from the chula (fire-place) which finds a place near the bed adds to the insanitary condition of the place and discomfort of the patient and the hearth for heating the galthuthi (a liquid substance to feed the baby is properly explained further on) as well as the fire underneath the bed of the woman, make the picture of misery complete and render the room unfit for human habitation.

From the foregoing description of the lying-in-room one can more easily imagine the condition of such a place than describe it.

Extract from paper of Miss Maggie Ghose, on "Puerperal fever."

There is a belief out in India that at the child-bearing time, the woman is unclean, so the treatment given to the women from all round them is unclean. The dai, if wearing clean clothes, when called to a case, will go home and change the clean ones and put on her dirtiest and filthiest things. The expecting woman will collect for nine months all the dirtiest rags she can find to use at the time her baby arrives and will tell you this with greatest glee. The women prefer to be confined on the floor, because they have not "charpais" enough, or they do not like to soil the "charpais," sitting on dry cow dung as they are fond of doing.

Extract from paper of Miss Bose, on "Puerperal fever."

This is the usual thing with dais, they handle the case too much in labour pains without washing and disinfecting their hands, and as soon as the delivery is over they don't look for rupture or wounds and placenta—whether it is complete. The first thing is they put ujwain and gur inside of the uterus in place of ergot; if labour is delayed they have learnt to give ergot powders. Ruptures and wounds are neglected until fever rises to 103°, 104°. This fever is taken to be milk fever. When the patient becomes restless as a rule here a male doctor is sent for. He brings to their notice whether there is any rupture or wounds inside, they say there is nothing of the sort and they will make the relative understand this little rupture and wound is quite natural with every woman. Don't you understand a big head coming out from a small passage, and at the same time threatening them about douching. The relative tells the doctor "ordinary sores she has dai says, there is nothing much she says." Now the doctor tries all sorts with medicines: it is patient's luck now, if she gets over it, it is all right, and if she becomes worse, at the last moment disqualified female medical aid is sent for that all the blame may come upon them and relatives then are beg-

ging to do anything to save the life of the patient: even if we refuse seeing the patient's condition, sometimes for the conscience sake we do, dais get a good opportunity to frighten the females more about the douching.

And whoever wants to become a dai or a doctor they go house to house advertising themselves and deceiving people by telling them they will do the work cheap. Why you people spend so much money on doctors and they are practising in the city publicly. One of them has got a sign-board hung at the door that women and children are treated here, and she is a doctor's wife. I was asked by some doctors and people here to report her to Deputy Commissioner here, I asked them to join with me, put down your signatures, they kept quiet. I dare not do so as people are revengeful and I am living alone here depending on servants: besides after enquiring I came to know there is no special rule to check them, from the Government, and people are not straightforward to say the facts. Lately the above-mentioned woman confined a case in the neighbourhood. She was quite a young girl and her first delivery. The child was born dead and the mother died after 15 or 20 days, so I was told. That woman was a relative to this person who told me that he lives close to my house. He was telling me, why don't you report such a person. She is deceiving the public and afterwards he said he came to know that she is not a doctor but a fraud. But Miss Sahib it was in that girl's luck that she should die in that woman's hand. I told him I can't make reports because you people are not straightforward. Should any enquiries be made you people will deny. Then he said "Let it go, Miss Sahib. It is a shame amongst us to take our female's name before other men."

Some women will go to some big people's house and they will press hand and feet of their wives and flatter them, and then she begs them to tell Shahji or Sardarji to recommend us to work in the city, and she is told by the lady of the house, you go and work: if anybody says anything to you come and tell me. This is another difficulty why we can't report such women. Unless some special rules are issued for such dais to threaten them, death rates due to puerperal fever and other female ailments can never be lessened or prevented.

CHAPTER IX.—NOTES ON WORK DONE IN BOMBAY, MADRAS, NAGPUR, BHOPAL, FEROZEPORE.

Bombay.

In the Bombay Presidency very important work is being carried out at Bombay in connection with the Lady Willingdon Scheme.

The object of this is to get the untrained dais into touch with trained nurses and lady health visitors, so that their work can be supervised until the demand is created and the supply provided of a better trained class of nurse. Up to the present time 160 of these untrained dais have received a course of instruction in the vernacular. They are known to the District Registrars and Municipal nurses, and the effort is to get them to call in skilled help and to notify to the Health Department births, deaths and cases of sickness among women.

There are three Maternity Homes under qualified medical women, which are well attended, and where midwives of a better class are trained.

There are ten paid Health Visitors who visit the houses of the poor and give them homely talks on hygiene, prevention of disease, care of children, etc. They report to the Health Department cases of sickness, unregistered births and unvaccinated children.

There are 67 voluntary workers who visit the homes with or without the Health Visitor, and there are 30 Lady Presidents each of whom is in charge of a section of the city. The Lady President presides at a monthly meeting, hears the results of the work done by the lady workers, Health Visitors and nurses of the section and does all in her power to awaken interest for the scheme in her friends and other women of the city.

A Ladies' Committee visit the Maternity Homes regularly and a Sub-Committee supervises the work of the Health Visitors.

Milk depôts have been established at each Maternity Home and pure pasteurised milk is distributed at 4 annas per seer or at cheaper rates for those unable to pay so much, on production of a card.

This scheme has been financed by subscriptions from the public. The Honorary Secretary and Treasurer is the Executive Health Officer of Bombay. Hence the organization is under the control, and works in the closest co-operation with, the Municipal Health Department.

Requests are constantly received from the mufussil for information with a view to similar organisations being started.

Madras.

In the Madras Presidency a good deal has been done in the way of training the better class midwife. In Madras City, about a hundred

midwives are trained yearly. In various mufussil hospitals midwives are also trained. The non-caste women especially are willing to come into hospital for their confinements, so there is plenty of clinical material for teaching purposes. In spite of this the indigenous dai appears still to carry on most of the work.

A Child Welfare Scheme has recently been started in Madras and a qualified medical woman, Miss Virasingh, M.B., has been put in charge. Two qualified nurses for each division of the city are now working under her supervision. Dr. Virasingh says:—"There is a difficulty—the barber dai acts ayah to mother and baby for a whole month and gets just a rupee and perhaps a cloth or two in return, whereas my nurses cease all attendance on the tenth day. Then their great complaint is that we ask for clean linen and hot water, etc., while the barber needs none of these things."

Nagpur.

Before beginning work among Nagpur midwives a preliminary investigation was made in order to find out by whom maternity cases were actually being attended. Taking various quarters of the city in turn—rich and poor, progressive and backward—from 50 to 100 consecutive cases of child-birth in each were visited. The result was as follows:—

*Total number of cases investigated		1,000
A. Number of cases attended by indigenous dais ...	958	
By dais of Mang caste ...	529	
„ „ Mhali (nai or barber caste) ...	329	
„ „ Basod caste ...	26	
„ „ Sweeper caste ...	21	
„ „ Vidhoor caste ...	10	
„ „ Various other castes, or of caste unknown, or attended by an untrained relative	43	
B. Number of cases attended by trained persons ...	42	
By midwives ...	38	
By doctors ...	4	

It thus appears that 95·8 per cent. of the cases of child-birth in Nagpur City are attended by untrained women, and that dais of the Mang caste are responsible for more than 50 per cent. An effort was therefore made to get into touch with these women. They are asked to come twice a week to report the cases they attend, and to receive some simple instruction, and they are encouraged to send their children to school. They receive 4 annas for each case where the inspecting nurse finds (during the first or second week) both mother and child well; 2 annas being deducted for any death. During the weeks or months when class

* These figures refer only to confinements taking place at home. It has been ascertained that 2·05 per cent of Nagpur city births during last year took place in hospitals.

instruction is being given, they receive from 8 annas to Re. 1-8 monthly for attendance. For each girl sent to school, they receive 1 anna for each day's attendance, and for each boy half-an-anna. They also get 8 annas or Re. 1 for calling help in difficult cases or for taking the patient to hospital.

I desire to acknowledge with gratitude a grant of Rs. 500 towards this work from the local branch of the Victoria Memorial Scholarships Fund.

The idea at present is not so much to give a definite course of instruction to dais, examine them, give them certificates, and let them pass out, but rather to keep in touch from year to year with all the dais who are willing to come, inspect their cases, give them simple instruction for some weeks annually, have talks with them on current topics (*e.g.*, small-pox or plague) or any special difficulty in connection with the maternity cases reported by them; and also to get into touch with their children.

They are asked to provide themselves with a very simple kit—blunt-pointed scissors and clean ligature material with a small dish for boiling these in, also soap and basin. These articles are offered for sale on the monthly or quarterly pay day. About thirty dais have purchased them, and possibly about one-third of that number really use them regularly. Occasional prizes are given to those whose hands and nails are cleanest.

In quite half the cases the report is that they were called only after the baby was born. At first sight this seems excellent as reducing the possibility of interference to a minimum; however, in many of these cases, it appears that another "handy woman" or a relative gives assistance till the child is born, Mang dai then being called to cut the cord, and to undertake the after attendance; customs vary very much among the different castes.

Some infant mortality has, one thinks, been prevented at the time of birth by less interference with nature, earlier sending for assistance when necessary, more skilful dealing with breech cases, and artificial respiration (which has caught on amazingly) in cases of apparently dead-born infants. But in tiding weakly children over the first weeks of life much has yet to be done, and in cases where the mother has repeatedly given birth to dead children, it is very difficult to get her to come for regular treatment.

Our desire for the children who come to school is clean sensitive hands, and a little knowledge of the three R's. We use the Montessori material, and find it helpful. Hand washing and 'nail parade' are part of the day's routine.

Bhopal.

The dais attend classes six times a week. While doing so, they receive scholarships of from Rs. 3 to Rs. 5 per mensem, according as to whether

they are undergoing training in midwifery only, or in midwifery and general nursing. These scholarships are given on the understanding that the dais do no work in the city except by special permission while under training.

After a year's training they are examined and on passing begin work in the city. Each qualified dai is required to report every case confined by her and each of these cases is visited by the matron of the Lady Lansdowne Hospital, who notes the condition of the mother and child and obtains treatment for them if necessary. The matron is accompanied on these visits by the dai in charge of the case. The Police also send in a list of births occurring in the city with the name of the dai in attendance, thus enabling us to check the cases reported by the dais.

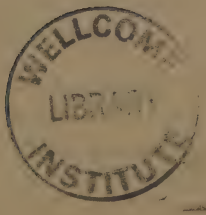
Any misconduct or negligence on the part of a dai is punished by stopping her practice for a varying period of time, the Police being informed of this. This system which has been in force since 1909 and was developed by Mrs. F. D. Barnes, M.D., who was in charge here till March 1914, has proved very satisfactory on the whole. From 1,400 to 1,800 cases are attended during a year by the city dais and visited by the matron.

I have lately drawn up a list of dais now practising in the city and suburbs, with the district in which they work, and intend distributing copies of this to the police thanas, tehsils, ladies' clubs and other places of importance for the information of the public. This will be altered periodically as required.

Ferozepore.

Dr. Maud Allen commenced classes in connection with the Victoria Memorial Scholarships Fund in 1907, but in spite of many efforts she could not get the indigenous dais to attend. Up to 1915, 33 dais had been trained, but these were nearly all of the non-dai class. In 1915, an energetic Cantonment Magistrate interested himself in the matter. He summoned all the dais working in Ferozepore Cantonment, addressed them himself and required them to attend Dr. Allen's class. They did so. Dr. Allen arranged that they should report their cases to her and that she should visit them for the purpose of supervision. The dais told the patients "the order has been given for Dr. Allen to visit you;"—no opposition was made; in fact the people welcomed the visits. Hearing of their success the Deputy Commissioner asked Dr. Allen to undertake the dais of Ferozepore City. The same arrangements were made and successfully carried out, and during this year there were 80 dais under instruction. A simple outfit of necessaries for cleanly practice was arranged for each dai. Dr. Allen expressed her gratitude to the two officials who by a few words effected this great change.

It is indeed an object lesson as to what can be done with the hearty co-operation of those in authority.



CHAPTER X.—RULES AND REGULATIONS AND OBJECTS OF THE FUND.

Published in 1903.

1. The sums raised in furtherance of the above object shall constitute the Victoria Memorial Scholarships Fund, shall be kept separate from the present investment of the Countess of Dufferin's Fund proper, and interest accruing therefrom shall be exclusively used for the object for which Lady Curzon instituted the said Fund.

2. An Executive Committee shall be appointed by the Central Committee and charged with its direct management, and this Committee shall consist of—

(1) the Lady President;
(2) the Director-General, Indian Medical Service.
(3) a Member nominated by the Central Committee;
(4) the Honorary Secretary, Central Committee, Countess of Dufferin's Fund.

3. For the local administration of the Fund there shall be formed a Local Committee in each centre of operations, consisting of—

(*a*) the Civil Surgeon of the district,
(*b*) the wife of a senior Civilian, and
(*c*) a Secretary selected by the other two members.

The Local Committee shall in each instance be in direct communication with, and immediately responsible to, the local Inspector-General of Civil Hospitals or Administrative Medical Officer, who shall be guided by such instructions as the Executive Committee may think fit to issue.

4. The Executive Committee shall issue the necessary formal instructions to the Provincial and Local Branches, it being distinctly understood—

(*a*) that the interest of the subscriptions shall be, as far as possible, expended in the districts whence they have been received, and
(*b*) that in all cases the dais shall be instructed in hospitals, training schools and dispensaries lying nearest to the localities in which they will ultimately be engaged.

5. The said Fund may be utilized not only for the provision of scholarships, but also for the payment of teachers, provision of models, books and such incidental expenses as the Executive Committee may consider to fall within the objects of the Fund.

6. The Executive Committee may call for special reports from the Local Branches regarding their administration of the said Fund, and the results shall be shown in a separate section of the ordinary annual report issued by the National Association for Supplying Female Medical Aid to the Women of India.

Objects of the Fund.

The main objects of the Victoria Memorial Scholarships Fund, initiated by the late Lady Curzon in 1901-02, with the object of keeping in perpetual remembrance the sympathetic interest taken by the late Queen Empress in the domestic troubles of the women of India, have already been duly explained in previous reports; and before giving a summary of the work accomplished in 1915, and in order that there may be as little misconception as possible about the scheme, the Committee thinks it advisable to again repeat what has already appeared in previous reports regarding the definite nature of the Fund.

The general object of improving the treatment of childbirth in India can be approached on two lines, which admit of being followed concurrently and which react on each other—

(1) to train up midwives of a superior class;
(2) to endeavour to impart a certain amount of practical knowledge to the indigenous midwives (dais).

The former course, which is that followed in the main by the Dufferin Fund, presupposes a certain standard of education among the women who are trained. They must be able to read and write, and be capable of understanding lectures and studying simple text-books. It is, therefore, out of the question, until the number of educated women in India has very greatly increased, that the number of highly trained midwives should be anything but infinitesimally small in relation to the demand for their services. Such midwives, moreover, receive relatively large salaries and charge high fees; most of them belong to classes more or less out of touch with the customs and traditions of the people, and their sphere of action is limited by these considerations. Lady Curzon therefore decided that the proceeds of her appeal should be devoted to carrying out as far as possible the second of the two courses mentioned above. This she believed to be an entirely new departure. It proceeds on the principle of making the best of actual facts and existing agencies, thus endeavouring gradually to improve them. The general idea is to get hold of as many as possible of the *indigenous hereditary midwives* and induce them to attend at Dufferin hospitals, or at the female divisions of ordinary hospitals or dispensaries, for the purpose of acquiring such empirical knowledge as it is possible to impart to them. In comparison

with the training of the regular midwife class, the amount of such knowledge will be very small; but the women themselves, or some of them, would start with a certain practical acquaintance with the subject and will probably learn quickly. Even if at first only negative results are obtained, and the trained women merely abandon or discourage insanitary practices, the gain will be great. In time they will learn more, and whatever they learn will spread over a far wider area than can be reached by means of the superior class of midwives. The teaching will at first be oral, and will be conveyed in the colloquial language familiar to the pupils. And in order that this should be carried into effect, short and simple primers of midwifery practice in the various vernaculars have been prepared for the use of dais. In many of the classes reading and writing are being taught to enable the pupils to refer to these books. Most of the teaching will be committed to memory, and will tend to popularise the improved methods which will be taught to the dais.

In order to give effect to these principles, the objects of the Fund have now been defined to be—

(1) To train midwives in the female wards of hospitals and female training schools in such a manner as will enable them to carry on their hereditary calling in harmony with the religious feelings of the people, and gradually to improve their traditional methods in the light of modern sanitation and medical knowledge.

(2) Scholarships to midwives will vary according to circumstances and locality.

(3) When desirable qualified female teachers, who understand the vernacular, will be sent to outlying districts, and fees will be paid to midwives who attend a course of elementary instruction.

(4) Funds for the above purpose will be granted, as far as possible, according to the interest received on the sums raised in each locality.

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